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PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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*Christine Sherwood*  
Christine Sherwood

Applicant : Werner Taubmann, et al.  
Application No. : 09/647,899  
Filed : October 6, 2000  
Title : SPINDLE OR WORM DRIVE FOR ADJUSTING DEVICES IN MOTOR VEHICLES  
  
Grp./Div. : 3634  
Examiner : Gregory J. Strimbu  
  
Docket No. : 40551/MEG/M521

**PETITION TO WITHDRAW HOLDING OF ABANDONMENT (MPEP 711.04(c))  
DUE TO ERRONEOUS ABANDONMENT BY THE OFFICE IN THE  
NOTICE OF ABANDONMENT DATED MAY 14, 2004**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Post Office Box 7068  
Pasadena, CA 91109-7068  
May 17, 2004

Commissioner:

This subject application was abandoned (Abandonment attached as Exhibit "A") allegedly due to Applicant's failure to timely file a proper reply to the Office letter mailed on September 23, 2003.

The abandonment is in error and should be reversed for the following reasons:

A response to the Office action of September 23, 2003, including a Petition for Extension of Time, Information Disclosure Statement, Form PTO/SB/08A/B and references, were sent by Certificate of Mailing on March 23, 2004 (copy attached as Exhibit "B"). A copy of the return postcard received by the Patent and Trademark Office on March 29, 2004 is attached as Exhibit "C".

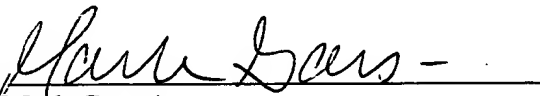
**Application No. 09/647,899**

The May 14, 2004 Notice of Abandonment is an error on the part of the Patent Office, and withdrawal of the abandonment and prompt patent issuance is requested. As this is an error by the Office, no petition fee is due.

The Commissioner is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by or to give effect to this paper to Deposit Account No. 03-1728. Please show our docket number with any charge or credit to our Deposit Account.

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By   
Mark Garscia  
Reg. No. 31,953  
626/795-9900

MEG/cks

Enclosures: Notice of Abandonment  
Response to the Office action  
Return postcard

CKS PAS565477.1-\*05/17/04 11:21 AM



**U.S. Department of Commerce**  
**Patent and Trademark Office**  
**Assistant Commissioner of Patents**  
**Technology Center 3600**  
**2451 Crystal Drive, Arlington VA**

## FAX COVER SHEET

<b>To:</b>	Mark Garcia	<b>From:</b>	Gregory J. Strimbu
<b>Fax:</b>	626-577-8800	<b>Art Unit:</b>	3634
<b>Serial No.:</b>	09/647,899	<b>Date:</b>	5/14/04
<b>CC:</b>	<b>Phone No.:</b> 703-305-3979		

☐ Urgent    ☒ For Review    ☐ Please Comment    ☐ Please Reply    ☒ Per Your Request

• **Comments:** A copy of the notice of abandonment that will be mailed shortly.

Number of Pages 2, including this page.

### STATEMENT OF CONFIDENTIALITY

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**Notice of Abandonment**

Application No.

09/647,899

Examiner

Gregory J. Strimbu

Applicant(s)

TAUBMANN ET AL.

Art Unit

3634

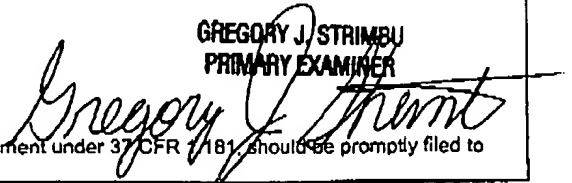
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 9/23/04.
  - (a) ☐ A reply was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply (including a total extension of time of \_\_\_\_\_ month(s)) which expired on \_\_\_\_\_.
  - (b) ☐ A proposed reply was received on \_\_\_\_\_, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection. (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
  - (c) ☐ A reply was received on \_\_\_\_\_ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
  - (d) ☒ No reply has been received.
2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
  - (a) ☐ The issue fee and publication fee, if applicable, was received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
  - (b) ☐ The submitted fee of \$\_\_\_\_\_ is insufficient. A balance of \$\_\_\_\_\_ is due.  
The issue fee required by 37 CFR 1.18 is \$\_\_\_\_\_. The publication fee, if required by 37 CFR 1.18(d), is \$\_\_\_\_\_.
  - (c) ☐ The issue fee and publication fee, if applicable, has not been received.
3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
  - (a) ☐ Proposed corrected drawings were received on \_\_\_\_\_ (with a Certificate of Mailing or Transmission dated \_\_\_\_\_), which is after the expiration of the period for reply.
  - (b) ☐ No corrected drawings have been received.
4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.
5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.
6. ☐ The decision by the Board of Patent Appeals and Interference rendered on \_\_\_\_\_ and because the period for seeking court review of the decision has expired and there are no allowed claims.
7. ☒ The reason(s) below:

Mr. Mark Garcia called on May 14, 2004 to inquire about the response to the outstanding Office action. Mr. Garcia stated that the response was mailed to the PTO on March 23, 2004. The examiner stated that the Office records do not indicate that the response of March 23, 2004 had been received. Accordingly, the application has gone abandoned.

GREGORY J. STRIMBU  
PRIMARY EXAMINER

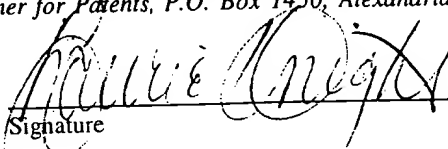


Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
AMENDMENT TRANSMITTAL LETTER**

*I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 23, 2004.*

  
\_\_\_\_\_  
Signature

Applicant : Werner Taubmann, et al.  
Application No. : 09/647,899  
Filed : October 6, 2000  
Title : SPINDLE OR WORM DRIVE FOR ADJUSTING DEVICES IN MOTOR VEHICLES

Grp./Div. : 3634  
Examiner : Gregory J. Strimbu

Docket No. : 40551/DBP/M521

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PostOffice Box 7068  
Pasadena, CA 91109-7068  
March 23, 2004

Commissioner:

Enclosed is an amendment to the above-identified application.

CLAIMS AS AMENDED						
	Claims Remaining After Amendment	Highest Number Paid For	Number Extra Claims	Small Entity Rate	Large Entity Rate	FEE
Total Claims Fee	48**	*42* <sup>10</sup>		x \$9.00	0 x \$18.00	0
Independent Claims	4	** 3	1	x \$43.00	1 x \$86.00	86.00
Multiple Dependent Claims ***				\$145.00	\$290.00	
TOTAL FILING FEE						86.00
NO ADDITIONAL FEE REQUIRED ****	IF NO FEE REQUIRED, INSERT "0"					
LIST INDEPENDENT CLAIMS: 1, 27, 48 and 52						
* IF HIGHEST NUMBER PREVIOUSLY PAID FOR IS 20 OR LESS, WRITE "20" IN COLUMN 3 ** IF HIGHEST NUMBER PREVIOUSLY PAID FOR IS 3 OR LESS, WRITE "3" IN COLUMN 3 *** PAY THIS FEE ONLY WHEN MULTIPLE DEPENDENT CLAIMS ARE ADDED FOR THE FIRST TIME **** IF NO FEE REQUIRED, ADDRESS ENVELOPE TO "BOX NON-FEE AMENDMENTS"						

X Attached is our check for \$86.00 to pay the fees calculated above.  
X A Petition for Extension of Time and the required fee are enclosed.


**Amendment Transmittal Letter**  
**Application No. 09/647,899**

X Other enclosures: Information Disclosure Statement; Form PTO/SB/08A/B

The Commissioner is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by or to give effect to this paper to Deposit Account No. 03-1728. Please show our docket number with any charge or credit to our Deposit Account. **A copy of this letter is enclosed.**

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By   
Mark Garscia  
Reg. No. 31,953  
626/795-9900

MEG/cks

CKS PAS556761.1-\*03/23/04 5:20 PM

PLEASE SIGN AND RETURN TO ACKNOWLEDGE RECEIPT

Title SPINDLE OR WORM DRIVE FOR ADJUSTING Client ID H521  
DEVICES IN MOTOR VEHICLES Case No 40551  
Atty/Sec MEG/11k

Ser/Pat/Reg No: 09/647,899 Date Mailed 3-23-2004  
Filed/Issued : October 6, 2000 Date Due 3-23-2004

\_\_\_\_ Assigned Enclosed (List Assignee) Cert of Mailing Yes  
Express Mail No. \_\_\_\_\_



DOCUMENT TITLE:

(List enclosures)

\*Amendment Transmittal

\*Petition for Extension of Time

\*Checks (\$86 - filing fee; (\$950 Ext.

of Time)

\*IDS/13/03A/3)w/references

Checked by:

[Signature]

ACKNOWLEDGE HERE

27 PAT

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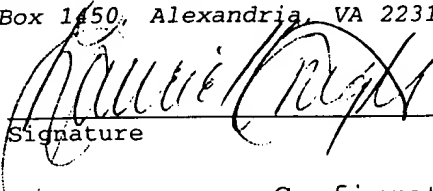
\_\_\_\_ DBA

REV 11/93 FORM P2

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Signature

Appl No. : 09/647,899 Confirmation No. 6061  
Applicant : Werner Taubmann, et al.  
Filed : October 6, 2000  
Title : SPINDLE OR WORM DRIVE FOR ADJUSTING DEVICES IN  
MOTOR VEHICLES  
  
TC/A.U. : 3634  
Examiner : Gregory J. Strimbu  
  
Docket No. : 40551/MEG/M521  
Customer No. : 23363

**AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Post Office Box 7068  
Pasadena, CA 91109-7068  
March 23, 2004

Commissioner:

In response to the Office action of September 23, 2003,  
please amend the above-identified application as follows:

**Amendments to the Substitute Specification** begin on page 2 of  
this paper.

**Amendments to the Claims** are reflected in the listing of claims  
which begins on page 3 of this paper.

**Remarks/Arguments** begin on page 18 of this paper.



**Amendments to the Substitute Specification:**

Replace the paragraph beginning on page 2, line 1 with the following paragraph:

From DE 43 24 913 C1 a housing is known for an electric servo drive which consists of a housing shell and a housing cover which on one side are connected together by elastic snap-fit elements and which on the other side are supported against each other through additional supporting areas.

Replace the paragraph beginning on page 12, line 4 with the following paragraph:

This pre-assembled gear 9 is now inserted into a combined holding and staking device which holds the gear 9 around its outer contour. The holder is provided in the direction of the plane of the housing plates 72a; 72b wherein the holding forces which engage on the four corners of the housing plate 71a or 71b are kept relatively small.

Replace the paragraph beginning on page 13, line 12 with the following paragraph:

The bearing of the threaded spindle 5 can also be designed so that the holders 6a, 6b (see Figure 2) of the threaded ~~spring~~ spindle 5 are associated with vibration-damping sleeves (not shown here) or similar structural elements.

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Amdt date March 23, 2004

Reply to Office action of September 23, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A drive for adjusting devices in motor vehicles comprising:

a guide rail assembly having a first rail and a second rail that are displaceable relative to each other, the first rail and the second rail defining a hollow cavity therebetween;

~~one of a fixed threaded spindle and a fixed toothed rack~~  
rotationally fixed on and relative to one of the first and second rails ~~two relatively displaceable parts;~~

a gear assembly mounted on the other of the first and second rails and operably connected to the threaded spindle ~~two relatively displaceable parts;~~ and

a gear housing holding the gear assembly, with the gear housing having at least two housing plates ~~which can be fixed~~ against each other by plug-in connectors;

each plug-in connector comprising a rigid plug at one of the at least two housing plates and a receptacle for the plug at the other of the at least two housing plates, and each plug-in connector is connected by plugging the plug into a respective one of the receptacles;

wherein the gear housing and the gear assembly are located in the hollow cavity

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~~wherein the plug-in connectors are formed sufficiently rigid to fix the at least two housing plates relative to each other in all three dimensional directions and to form supporting connecting joints which absorb gear forces, and~~

~~wherein the at least two housing plates are fixed relative to each other solely at the plug-in connections.~~

2. (Canceled)

3. (Withdrawn) The drive according to claim 1, wherein the gear housing has two L-shaped housing plates.

4. (Previously Presented) The drive according to claim 1, wherein the at least two housing plates comprise at least two pairs of opposing disc-shaped housing plates.

5. (Withdrawn) The drive according to claim 1, wherein the gear housing has a U-shaped housing plate and a disc-shaped housing plate.

6. (Currently Amended) The drive according to claim 1, wherein for each of the plug-in connectors, the plug comprises a raised area ~~extending along the plane of one of the at least two housing plates~~ and the receptacle comprises an associated recess ~~extending transversely to the plane of the one of the at least two housing plates.~~

7. (Previously Presented) The drive according to claim 6, wherein the recess is a through opening.

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8. (Previously Presented) The drive according to claim 6, wherein the raised area is a web.

9. (Currently Amended) The drive according to claim 6, wherein ~~[[the]]~~ each raised area has two surfaces which are parallel to each other ~~in the assembly direction~~ and the associated recess has two surfaces which are parallel ~~in the assembly direction~~.

10. (Currently Amended) The drive according to claim 6, wherein ~~[[the]]~~ each raised area has surfaces that converge ~~running conical in the assembly direction~~ and the associated recess has surfaces which are parallel ~~in the assembly direction~~ so that a press fit is achieved during assembly.

11. (Currently Amended) The drive according to claim 6, wherein the housing plates are fixed by plastic deformation of ~~the material in the area of~~ the plug-in connectors.

12. (Previously Presented) The drive according to claim 1, wherein the housing plates are made from one of sintered material, cast material, steel and plastics.

13. (Previously Presented) The drive according to claim 1 further comprising bearing points for the gear assembly, at least a part of which are integrated in the at least two housing plates.

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14. (Currently Amended) The drive according to claim 1, wherein ~~the spindle is a threaded spindle and~~ the gear assembly includes a spindle nut having an internal thread and ~~[[with]]~~ external worm wheel teeth, and a drive worm engaging ~~therewith~~ the worm wheel teeth, the internal thread threadedly engaging the threaded spindle.

15. (Canceled)

16. (Currently Amended) The drive according to claim 1, wherein the ~~two relatively displaceable parts~~ first and second rails are a bottom rail and a top rail ~~of a box profile type guide rail assembly, the guide rail assembly having a hollow cavity, and~~

~~wherein the one of the fixed spindle and the fixed toothed rack is a spindle mounted in the hollow cavity and fixed through its ends on~~ and relative to the bottom rail and the gear housing is fixed on and relative to the top rail.

17. (Previously Presented) The drive according to claim 16, wherein the gear housing is mounted in a U-shaped gear socket of a holder with arms for fixing the gear assembly on the top rail.

18. (Currently Amended) The drive according to claim 17, wherein the arms ~~of the holder extend over the entire length of the top rail and~~ have fastening openings which correspond to fastening openings of the top rail so that the holder can be connected to the top rail ~~and reinforces same.~~

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19. (Previously Presented) The drive according to claim 18 wherein the fastening openings of the holder are fastening elements with internal threads which project into the hollow cavity.

20. (Currently Amended) The drive according to claim 18, wherein the gear assembly and the gear housing are assembled as a unit located in the holder, ~~and in the hollow cavity of the guide rail assembly~~ and the holder is screwed to the top rail through the fastening openings.

21. (Currently Amended) The drive according to claim [[16]] 17, wherein the holder has end areas which are angled so that they substantially fill out a [[the]] free cross-sectional area of one of the top rail and the bottom rail.

22. (Canceled)

23. (Previously Presented) The drive according to claim 17, further comprising ideal deformation points between the gear socket and the arms of the holder so that when a predetermined maximum boundary strain is exceeded the gear socket swivels sideways and clamps the threaded spindle.

24. (Previously Presented) The drive according to claim 1, wherein the ends of the spindle are mounted in vibration-damping sleeves to eliminate noise.

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25. (Withdrawn) The drive according to claim 1 for use with a window lifter, wherein the two relatively displaceable parts are a vehicle door and a window pane, the one of the fixed spindle and the fixed toothed rack is a spindle fixed on the vehicle door so that the spindle points in the direction of movement of the window pane, the gear assembly is connected to the spindle and is connected to the lower edge of the window pane.

26. (Cancelled)

27. (Currently Amended) A method for assembling ~~a gear housing for~~ a drive for adjusting devices in motor vehicles comprising:

~~a) providing one of a fixed spindle and a fixed toothed rack fixed on one of two relatively displaceable parts;~~

~~a gear assembly mounted on the other of the two relatively displaceable parts; and~~

~~a gear housing holding the~~ placing a gear assembly in a gear housing, with the gear housing having at least two housing plates which can be fixed against each other by plug-in connectors[[;]], each plug-in connector comprising a rigid plug at one of the at least two housing plates and a receptacle for the plug at the other of the at least two housing plates, and each plug-in connector is connected by plugging the plug into a respective one of the receptacles;

~~wherein the plug in connectors are formed sufficiently rigid to fix the at least two housing plates relative to each~~

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Reply to Office action of September 23, 2003

~~other in all three dimensional directions and to form supporting connecting joints which absorb gear forces, and~~

~~wherein the at least two housing plates are fixed relative to each other solely at the plug in connections;~~

[[b)]] prefitting gear elements of the gear assembly and the housing plates by fitting the housing plates together with the plug-in connections to form the gear housing ~~with supporting connecting joints that absorb gear forces;~~

[[c)]] inserting the gear elements and the housing plates into a device which holds the housing plates with sufficiently light holding forces around [[the]] an outer contour so that the housing plates can be aligned when the gear elements are turned,

[[d)]] turning the gear elements for the purpose of aligning bearing points of the gear elements which are provided on the housing plates; [[and]]

[[e)]] after alignment, securing the position of the gear elements and housing plates relative to each other by increasing the holding forces and permanently fixing the position of the housing plates ~~in all three dimensional directions~~ through action on the plug-in connectors;

locating the gear housing and the gear assembly in a hollow cavity between a first rail and a second rail that are displaceable relative to each other;

rotationally fixing a threaded spindle on and relative to one of the first rail and the second rail; and

mounting the gear assembly on the other of the first and second rails.



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28. (Currently Amended) The method for assembling a gear housing according to claim 27, wherein the gear elements are turned about at least 360 degrees and are then held in this position and fixed.

29. (Previously Presented) The method for assembling a gear housing according to claim 27, wherein the gear elements are driven at a speed which is above their nominal speed and the position of the housing plates are fixed relative to each other during rotation of the gear elements.

30. (Currently Amended) The method for assembling a gear housing according to claim 27, wherein the fixing of the housing plates is produced by ~~staking~~ plastically deforming material ~~in the area~~ of the plug-in connectors, ~~but outside of [[the]] an~~ an ~~area of bearing bores for the gear elements.~~

31. (Previously Presented) The method for assembling a gear housing according to claim 27, wherein the fixing of the housing plates is undertaken by one of laser welding and casting the plug-in connectors.

32. (Previously Presented) The method for assembling a gear housing according to claim 27, wherein the fixing of the housing plates is carried out by sticking the plug-in connectors.

33. (Previously Presented) The method for assembling a gear housing according to claim 27, wherein holding the outer

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contour of the housing plates, turning the gear elements and fixing of the housing plates are carried out in one combined assembly device.

34. (Withdrawn) The drive according to claim 1:

wherein the one of the fixed spindle and the fixed toothed rack is a threaded spindle tensioned rotationally secure between two holders at its ends; and

the gear assembly comprises a spindle nut engaged with the spindle;

wherein the threaded spindle is fixed in at least one holder through an ideal break point and wherein one end of the threaded spindle has a positive locking element which can be connected to a rotating tool in order to overcome the ideal break point for the purpose of an emergency operation of the drive.

35. (Withdrawn) The spindle drive according to claim 34, wherein a threaded element with a groove as a material weakened area is welded to one of the holders and the threaded element is squashed through the material weakened area with the threaded spindle.

36. (Withdrawn) The spindle drive according to claim 35, wherein the threaded element has on a side remote from the holder a distance sleeve for defining a travel path of a top rail on a bottom rail.

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37. (Withdrawn) The spindle drive according to claim 34, wherein one of the holders has a passage which is squashed with the threaded spindle at least one place for holding the threaded spindle.

38. (Withdrawn) The spindle drive according to claim 34 further comprising a threaded element welded to one of the holders and a counter nut for fixing the position of the threaded spindle.

39. (Withdrawn) The spindle drive according to claim 34, wherein a nut which is held secured against rotation in positive locking engagement through a stop on one of the holders is welded to the threaded spindle at at least one spot so that the welding spot is the ideal break point.

40. (Withdrawn) The spindle drive according to claim 34, further comprising an anti-rotation lock mounted securedly against rotation on the threaded spindle and inserted with positive locking engagement into a threaded spindle receiving bore of a security plate, wherein the anti-rotation lock is destroyed during emergency operation of the threaded spindle.

41. (Withdrawn) The spindle drive according to claim 34, wherein a security plate fixes through a bracket the position of a nut which is mounted on the threaded spindle and secures the position of the threaded spindle.

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42. (Withdrawn) The spindle drive according to claim 34, wherein a plastic security member is located in a threaded spindle receiving opening of each holder so that a circular round cross-section of each threaded spindle receiving opening remains secure and the width of the plastic security member is greater than the diameter of the threaded spindle receiving opening wherein in the case of an emergency operation the plastic security member can be removed and the threaded spindle can escape into the space which becomes available.

43. (Previously Presented) The drive according to claim 4, wherein each of the two pairs has two housing plates that are identical in design.

44. - 47. (Cancelled)

48. (New) A drive for adjusting devices in motor vehicles comprising:

a guide rail assembly having a top rail and a bottom rail that are displaceable relative to each other, the top rail and the bottom rail defining a hollow cavity therebetween;

a threaded spindle fixed on and relative to the bottom rail;

a gear assembly mounted on the top rail, the gear assembly including a spindle nut having an internal thread and external worm wheel teeth, and a drive worm engaging the worm wheel teeth, the internal thread threadedly engaging the threaded spindle;

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**Amdt date March 23, 2004**

**Reply to Office action of September 23, 2003**

a gear housing holding the gear assembly, with the gear housing having at least two housing plates fixed against each other by plug-in connectors;

each plug-in connector comprising a rigid plug at one of the at least two housing plates and a receptacle for the plug at the other of the at least two housing plates, and each plug-in connector is connected by plugging the plug into a respective one of the receptacles;

a holder having a base and two spaced-apart projecting portions extending from the base to form a U-shaped gear socket, the holder fastened on the top rail; and

wherein the gear housing and the gear assembly are mounted between the projecting portions of the U-shaped gear socket with the spindle passing through the projecting portions and wherein the holder, the gear housing and the gear assembly are located in the hollow cavity.

49. (New) The drive according to claim 48, wherein the holder has arms for fixing the gear assembly on the top rail, the arms having fastening openings which correspond to fastening openings of the top rail so that the holder can be connected to the top rail, and the fastening openings of the holder are fastening elements with internal threads which project into the hollow cavity.

50. (New) The drive according to claim 48 further comprising uncoupling elements of one of rubber and plastic mounted to eliminate noise and compensate for tolerances between

**Appln No. 09/647,899**

**Amdt date March 23, 2004**

**Reply to Office action of September 23, 2003**

the gear assembly and the projecting portions of the gear socket of the holder.

51. (New) The drive according to claim 48, wherein at least one of the at least two housing plates has an opening therethrough into which the external worm wheel teeth of the spindle nut project.

52. (New) A drive for adjusting devices in motor vehicles comprising:

a guide rail assembly having a top rail and a bottom rail that are displaceable relative to each other, the top rail and the bottom rail defining a hollow cavity therebetween;

a threaded spindle fixed on and relative to the bottom rail;

a gear assembly mounted on the top rail, the gear assembly including a spindle nut having an internal thread and external worm wheel teeth and a drive worm engaging the worm wheel teeth, the internal thread threadedly engaging the threaded spindle;

a gear housing holding the gear assembly, with the gear housing having at least two housing plates fixed against each other by plug-in connectors;

each plug-in connector comprising a rigid plug at one of the at least two housing plates and a receptacle for the plug at the other of the at least two housing plates, and each plug-in connector is connected by plugging the plug into a respective one of the receptacles;

a holder having a base and two spaced-apart projecting portions extending from the base to form a U-shaped gear socket;

**Appln No. 09/647,899**

**Amdt date March 23, 2004**

**Reply to Office action of September 23, 2003**

uncoupling elements of one of rubber and plastic mounted to eliminate noise and compensate for tolerances between the gear assembly and the projecting portions of the gear socket of the holder;

wherein the holder has arms for fixing the gear assembly on the top rail, the arms having fastening openings which correspond to fastening openings of the top rail so that the holder can be connected to the top rail, and the fastening openings of the holder are fastening elements with internal threads which project into the hollow cavity;

wherein the gear housing and the gear assembly are mounted between the projecting portions of the U-shaped gear socket with the spindle passing through the projecting portions and wherein the holder, the gear housing and the gear assembly are located in the hollow cavity.

53. (New) The drive according to claim 1 wherein for at least one of the plug-in connectors, the plug comprises a pin and the receptacle comprises an associated recess.

54. (New) The drive according to claim 1 wherein for at least one of the plug-in connectors, the plug comprises a tongue and the receptacle comprises an associated groove.

55. (New) The drive according to claims 1, 48 or 52; wherein the plug-in connectors are formed sufficiently rigid to fix the at least two housing plates relative to each other in all three-dimensional directions and to form supporting connecting joints which absorb gear forces.

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**Amdt date March 23, 2004**

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56. (New)        The drive according to claim 55, wherein the at least two housing plates are fixed relative to each other solely at the plug-in connections.



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**Amdt date March 23, 2004**

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**REMARKS/ARGUMENTS**

This amendment is submitted in response to the Office mailed September 23, 2003. Claims 1, 6, 9-11, 14, 16, 18, 20, 21, 27, 28 and 30 have been amended. Claims 2, 15, 22, 26 and 44-47 have been cancelled without prejudice. Claims 48-56 have been added. Accordingly, claims 1, 3-14, 16-21, 23-25, 27-43 and 48-56 remain in the application. Pursuant to a restriction requirement, claims 3, 5, 25 and 34-42 have been withdrawn from consideration.

On pages 2-3 of the Office action, claims 9, 10, 11, 14, 15-23 and 26-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With regard to claims 9 and 10, "the raised area" has been changed to "each raised area." In claim 10, "running conical" has been changed to "that converge." Also, "in the assembly direction" has been deleted as unnecessary. In claim 11, "the material in the area of" has been deleted as unnecessary. In claim 14, "therewith" has been changed to "the worm wheel teeth." In claim 16, the word "type" and the phrase "through its ends" have been deleted as unnecessary. Additional changes have been made to the claims to more completely cover certain aspects of the invention. Applicant respectfully requests that the Examiner carefully review the changes and approve them for entry.

On pages 3-4 of the Office action, claims 1, 2, 4, 6-15, 24, 26 and 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Weber. Claim 1 of the application recites a

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"guide rail assembly having a first rail and a second rail that are displaceable relative to each other, the first rail and the second rail defining a hollow cavity therebetween." In addition, claim 1 recites that "the gear housing and the gear assembly are located in the hollow cavity." Weber does not disclose these features. Accordingly, claim 1 is believed to be patentable over Weber. The last two paragraphs of claim 1 have been deleted as unnecessary. In addition, it is noted that the term "plates" in claim 1 should not be construed as limiting in any way. In particular, Figs. 5-9 show various "plates," some of which having varying thicknesses, different surface geometries and different shapes.

The remaining claims that are rejected as being anticipated by Weber depend from claim 1 and because they contain additional limitations further distinguishing these claims from Weber when considered as a whole, these claims are also believed to be patentable.

On pages 4-5 of the Office action, claims 16-23 and 44-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber as applied to claims 1, 2, 4, 6-15, 24, 26 and 43 and further in view of Isomura. In addition, claims 27-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weber. The Isomura reference describes the use of a rotatable threaded shaft 28. Weber, in contrast, describes a threaded shaft that is prevented from rotating. Col. 3, line 65 - Col. 4 - line 2. Accordingly, it is not possible to combine these two references without significantly changing the design of one or the other.

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The invention of claims 1 and 27 provide several advantages. The use of a "rotationally fixed" spindle leads to the advantage that the diameter of the spindle can be minimized. The reason for this is that a fixed spindle is less prone to vibrations than a turning spindle. Therefore, one can achieve the necessary stability of a fixed spindle (which is important in the case of vehicle collisions) even if its diameter is comparatively small. Further, in view of the small diameter of the spindle, the size of the corresponding gear elements can be reduced also.

Weber deals with an entirely different field of technology, namely the adjustment of a headlight on a vehicle. The Weber device is not related to drive units for seat adjustment devices, is not concerned with collision forces and does not use guide rails. The teachings of Isomura do not help because Isomura teaches away from the present invention recited in claims 1 and 27. In particular, Isomura uses a rotating spindle which interacts with two different gear elements located in two different gear housings, namely worm 16 located in housing 83 and nut 40 located in holders 138. In addition, Isomura describes a raised front part of the rail unit 46 to accommodate the large gear housing 83 and holders 94. Accordingly, applicant respectfully submits that claims 1 and 27 of the present application are patentable over Weber in view of Isomura.

New claim 48 is further distinguishable over Weber in view of Isomura based on the recitation, among other things, of "a spindle nut having an internal thread and external worm wheel

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teeth, and a drive worm engaging the worm wheel teeth, the internal thread threadedly engaging the threaded spindle," the location of the spindle and the gear housing on the bottom and top rails, respectively, and the U-shaped gear socket. Claim 51 further recites that "at least one of the at least two housing plates has an opening therethrough into which the external worm wheel teeth of the spindle nut project."

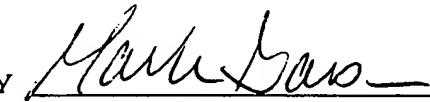
New claim 52 is further distinguishable over Weber in view of Isomura based on the recitation, among other things, of "uncoupling elements of one of rubber and plastic mounted to eliminate noise and compensate for tolerances between the gear assembly and the projecting portions of the gear socket of the holder," and "wherein the holder has arms for fixing the gear assembly on the top rail, the arms having fastening openings which correspond to fastening openings of the top rail so that the holder can be connected to the top rail and reinforces the top rail, and the fastening openings of the holder are fastening elements with internal threads which project into the hollow cavity."

In view of the above, applicant respectfully requests reconsideration of the application and the allowance of claims 1, 3-14, 16-21, 23-25, 27-43 and 48-56.

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By



Mark Garscia

Reg. No. 31,953

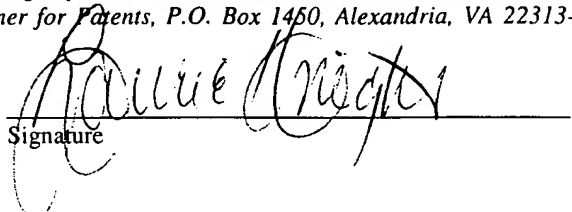
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**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
PETITION FOR EXTENSION OF TIME  
FROM THE OFFICE ACTION**

*I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on March 23, 2004.*

  
Signature

Applicant : Werner Taubmann, et al.  
Application No. : 09/647,899  
Filed : October 6, 2000  
Title : SPINDLE OR WORM DRIVE FOR ADJUSTING DEVICES IN MOTOR VEHICLES

Grp./Div. : 3634  
Examiner : Gregory J. Strimbu

Docket No. : 40551/MEG/M521

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Post Office Box 7068  
Pasadena, CA 91109-7068  
March 23, 2004

Commissioner:

Applicant petitions the Commissioner to extend the time for response to the Office action dated September 23, 2003 for three month(s) from December 23, 2003 to March 24, 2004.

The fee for extension of time required by 37 CFR § 1.17 is calculated below.

CALCULATION OF FEE			
LENGTH OF EXTENSION	SMALL ENTITY	LARGE ENTITY	FEE
WITHIN FIRST MONTH	\$ 55	\$ 110	\$
WITHIN SECOND MONTH	\$ 210	\$ 420	\$
WITHIN THIRD MONTH	\$ 475	\$ 950	\$950
WITHIN FOURTH MONTH	\$ 740	\$1480	\$
WITHIN FIFTH MONTH	\$1005	\$2010	\$

Submitted herewith is a check for \$ 950 to cover the cost of the extension.

**Petition for Extension of Time**  
**Application No. 09/647,899**

The Commissioner is hereby authorized to charge any fees under 37 CFR 1.16 and 1.17 which may be required by this paper to Deposit Account No. 03-1728. Please show our docket number with any charge or credit to our Deposit Account. **A copy of this letter is enclosed.**

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By Mark Garscia

Mark Garscia  
Reg. No. 31,953  
626/795-9900

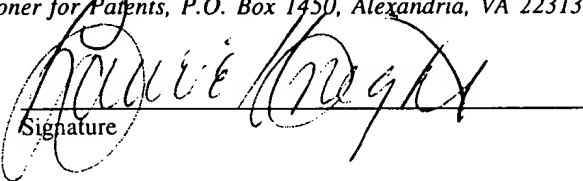
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant : Werner Taubmann, et al.  
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Grp./Div. : 3634  
Examiner : Gregory J. Strimbu  
  
Docket No. : 40551/MEG/M521

INFORMATION DISCLOSURE STATEMENT  
37 CFR § 1.97(b)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Post Office Box 7068  
Pasadena, CA 91109-7068  
March 23, 2004

Commissioner:

In compliance with the duty of disclosure under 37 CFR §§ 1.56, 1.97 and 1.98, and in accordance with the provisions in the Manual of Patent Examining Procedure §§ 609 and 707.05(b), enclosed is FORM PTO/SB/08A/B listing the references that are known to applicant. Copies of each of the listed references are enclosed. This filing is timely because it is made during one of the periods described in 37 CFR § 1.97(b).

It is respectfully requested that the listed references be considered in the examination of this application and identified on the list of references cited on the patent issuing for this application. Applicant also requests that an initialed copy of FORM PTO/SB/08A/B be entered in the application file and returned to applicant with the next communication from the Office in accordance with MPEP § 609.

**Application No. 09/647,899**

Enclosed are copies of photographs of two drive units which were brought to Applicant's attention by a third party and/or by BMW.

Exhibit A relates to a BMW Z3 drive unit which is similar to the drive unit described in U.S. Patent No. 5,349,878 (White et al.). The third party has asserted that Rockwell, the assignee of the White et al. patent, delivered the drive unit for the BMW Z3. It is believed that the BMW Z3 drive unit was in public use in the U.S. prior to 1998.

The drive unit comprises a rotating spindle driven by a worm gear and a helical gear which are located within a gear housing made of two parts. The gear housing is fixed at one end of the upper rail of a seat rail assembly consisting of a fixed lower rail and a movable upper rail. The housing is located outside the hollow cavity defined by the two rails whereas the threaded spindle and a stationary drive nut are located within the hollow cavity. The rotating spindle engages the drive nut which is separate from the gear elements (worm gear and helical gear) driving the spindle. The drive nut is located in a separate housing from the gear housing. The drive nut is also decoupled from its surrounding housing by an uncoupling element covering three faces of the drive nut. The third party asserts that the BMW Z3 includes radial bearing points for the spindle nut which are integrated in the housing parts of the gear housing and that it would be obvious to provide such bearing points for a drive worm.

As can be seen from the photographs of the drive unit used in the BMW Z3 (but not from U.S. Patent No. 5,349,878), the two parts of the gear housing are connected by plug-in connectors consisting of four pins at one of the parts in corresponding bores in the other part. After the pins have been inserted into the corresponding bores the two plates are finally secured and fixed to each other by plastically deforming the material in the area of the plug-in connections, namely by deforming the material of the pins.

The two parts of the gear housing are fixed in all three-dimensional directions. The plug-in connectors are the only means used to connect the two parts of the gear housing. BMW has represented to applicant that it was known in 1995 to connect two housing parts of a gear housing by means of plug-in connectors which are plastically deformed.

Exhibit B is a photograph of a drive unit which the third party asserts was used in a BMW E31 prior to 1998. Attached as Exhibit C is Internet information ("The Different Models of the 8 Series" (E31) (8 pages) and "Car Soft USA" (5 pages)) which indicates that the BMW E31 appears to have been offered and sold in the U.S. prior to 1998. Applicant has not confirmed that this drive unit was used in a BMW E31 or that a BMW E31 was in public use in the U.S. prior to 1998.



**Application No. 09/647,899**

The photograph shows a rotating, threaded spindle which is driven by a gear unit located within a gear housing situated at one end of the spindle. The gear housing contains the gear elements used to drive the spindle and consists of two parts which are connected to each other by plug-in connectors. In order to finally secure and fix the two parts of the gear housing, the material of the gear housing is plastically deformed outside the area of the plug-in connectors. Therefore, the two parts of the gear housing are not solely fixed against each other at the plug-in connections but also outside those connections by plastically deforming the material in the area outside the plug-in connections. The threaded spindle engages a nut located within a housing which is situated approximately in the middle of the threaded spindle.

The third party claims that both the gear housing containing the gear elements used to drive the spindle, the housing containing the spindle nut and also the spindle itself are located within the hollow cavity defined by two rails of a seat rail assembly. The third party also asserts that the gear housing is screwed to one of the guide rails by making use of two fastening openings with internal threads provided at the gear housing and that it is obvious to provide a U-shaped holder with fastening openings having an internal thread in order to attach the holder to the upper rail. Applicant has not been able to verify the relevance of these remarks because applicant has not been shown the complete guide rail assembly of the BMW E31.

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By 

Mark Garscia

Reg. No. 31,953

626/795-9900

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Enclosures: PTO/SB/08A/B, w/references

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<b>FORM PTO/SB/08A/B (10-01)</b> Substitute for PTO-1449A/B  <b>INFORMATION DISCLOSURE</b>  <b>STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)	<b>Attorney Docket Number</b>	<b>40551/DBP/M521</b>
	<b>Application Number</b>	<b>09/647,899</b>
	<b>Filing Date</b>	<b>October 6, 2000</b>
	<b>Applicant(s)</b>	<b>Werner Taubmann, et al.</b>
	<b>Group Art Unit</b>	<b>3634</b>
	<b>Examiner Name</b>	<b>Gregory J. Strimbu</b>

U.S. PATENT DOCUMENTS				
EXAMINER INITIALS	Cite No. <sup>1</sup>	DOCUMENT NUMBER Number - Kind Code <sup>2</sup> (If Known)	PUBLICATION DATE MM-DD-YYYY	NAME OF PATENTEE

FOREIGN PATENT DOCUMENTS					
EXAMINER INITIALS	Cite No. <sup>1</sup>	Foreign Patent Document Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (If Known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T <sup>6</sup> (✓)

OTHER DOCUMENTS		
EXAMINER INITIALS	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article, title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		Exhibit A - Photograph of BMW Z3, pp. 1-14
		Exhibit B - Photograph of BMW E31
		Exhibit C- Network Information - The different models of the 8-Series E31 (8 pages) +
		Internet Information - Carsoft USA (5 pages)

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EXAMINER SIGNATURE	DATE CONSIDERED
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at www.pto.gov or MPEP 901.4. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. <sup>6</sup> Applicant is to place a check mark here if English Language Translation is attached.	

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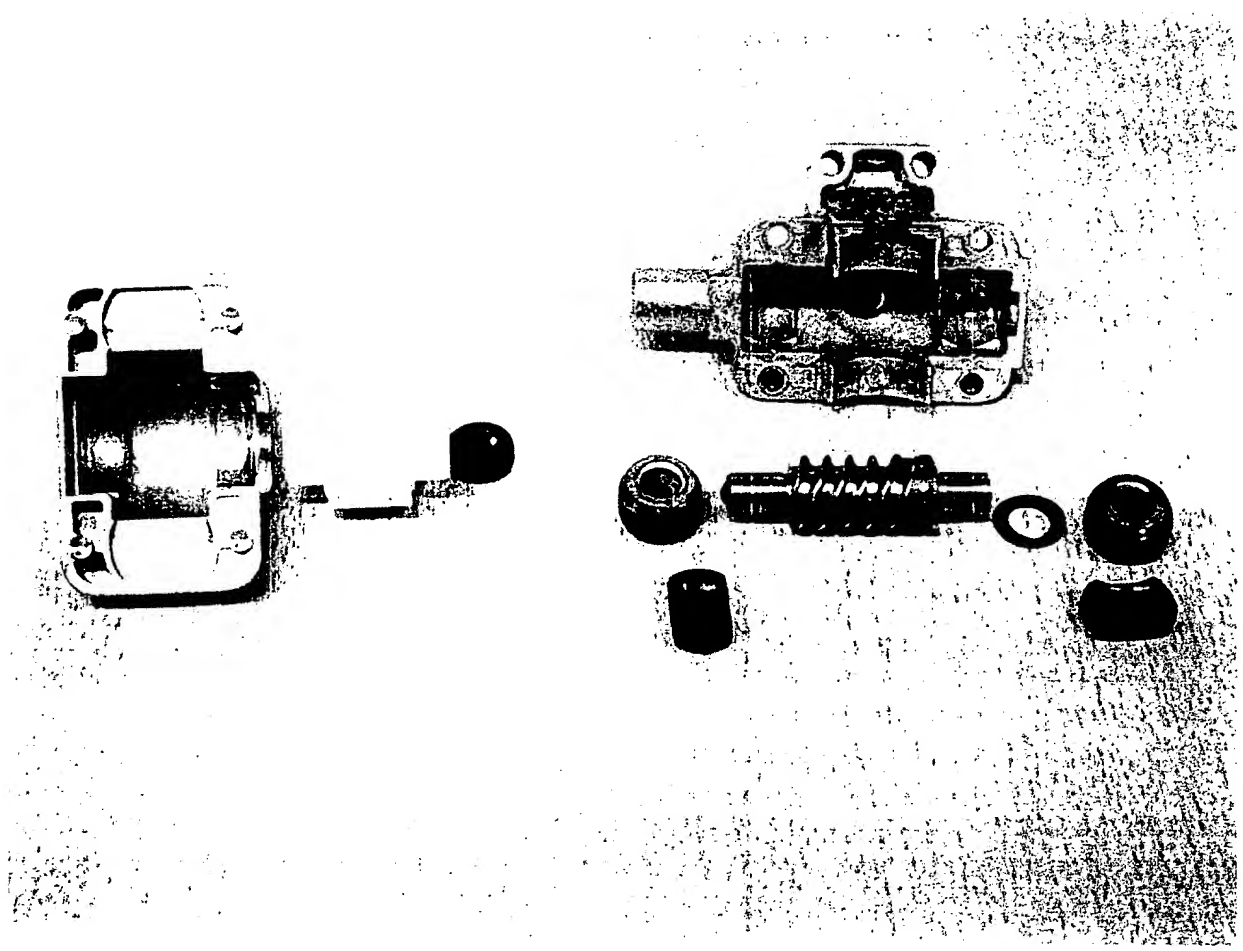
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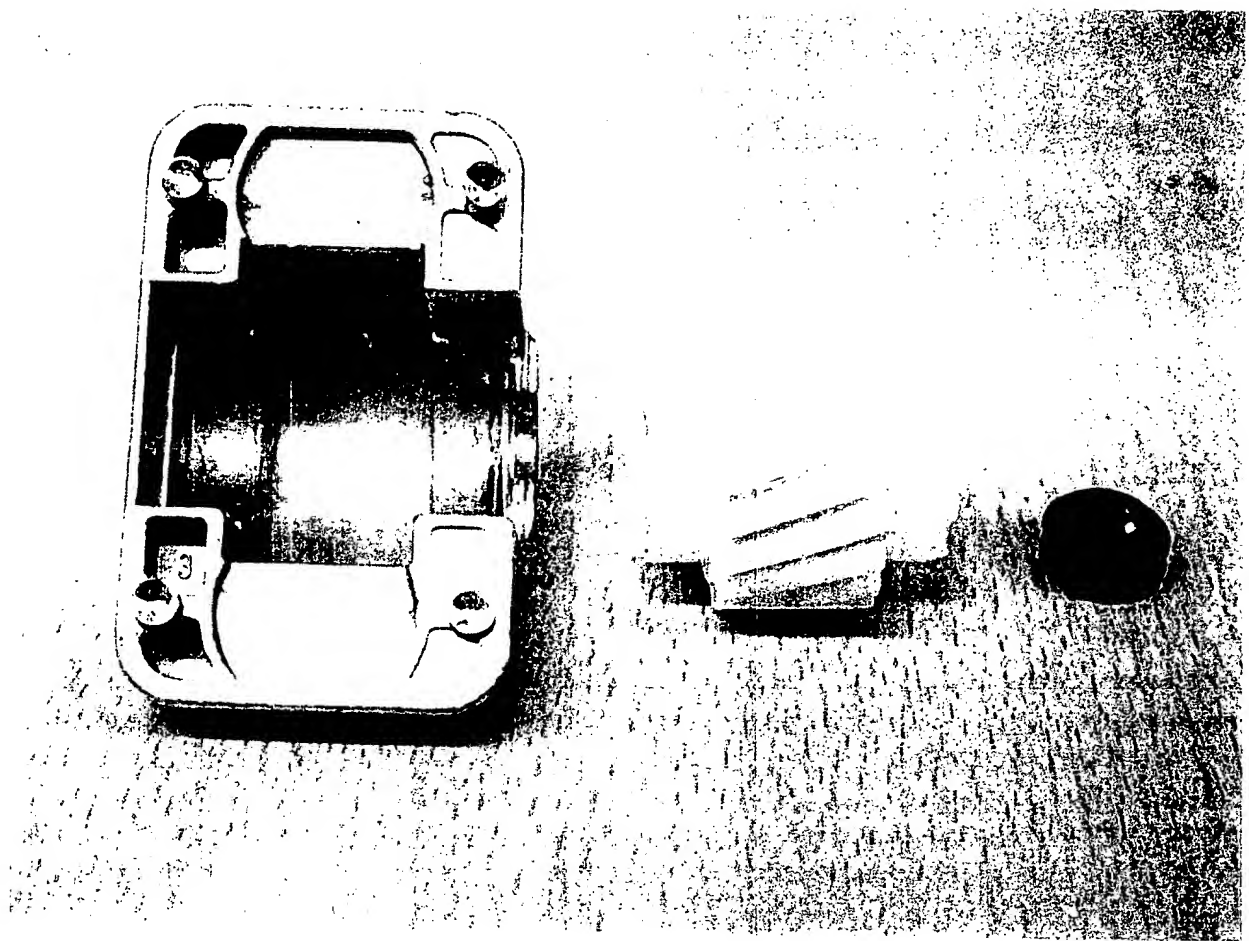
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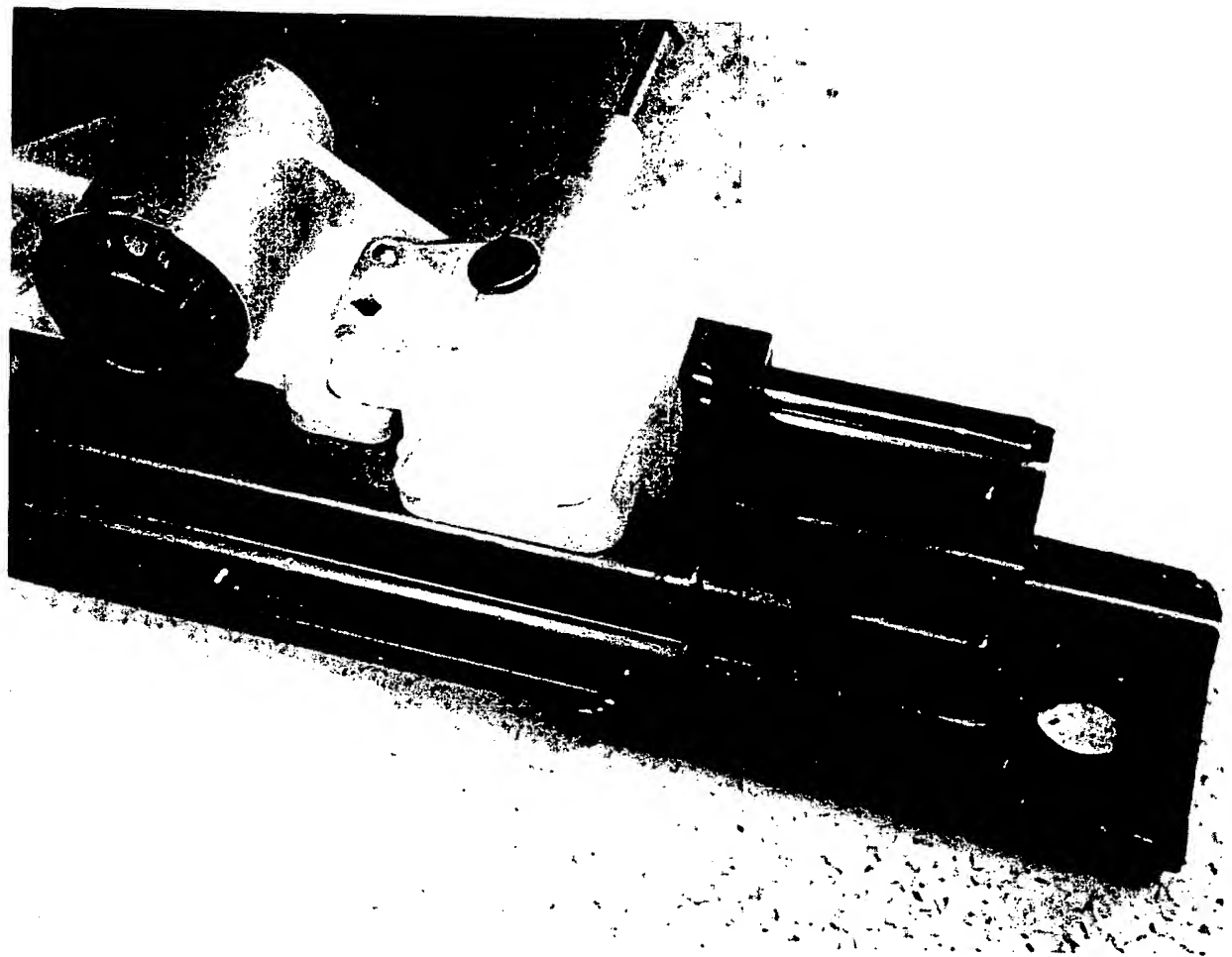
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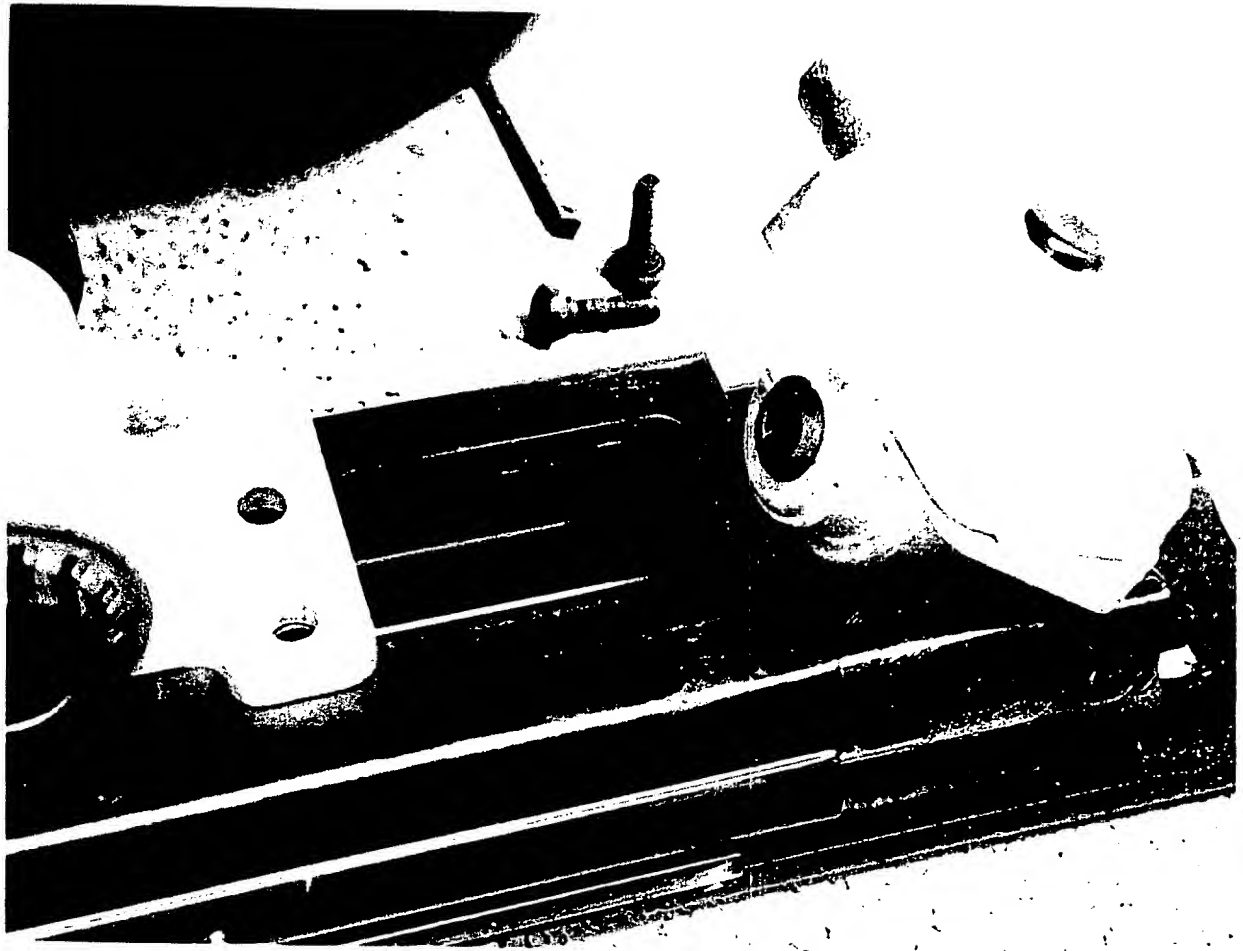
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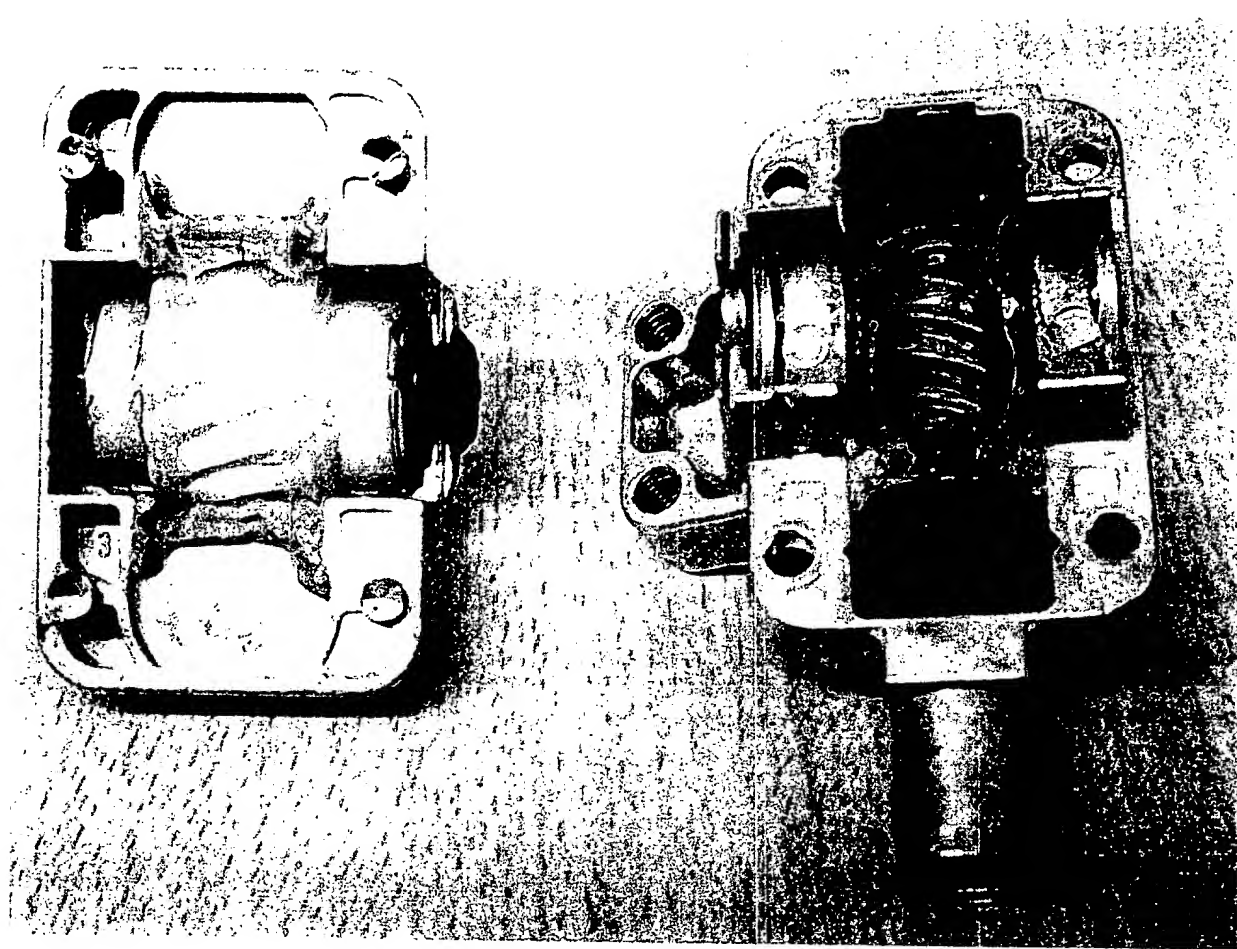
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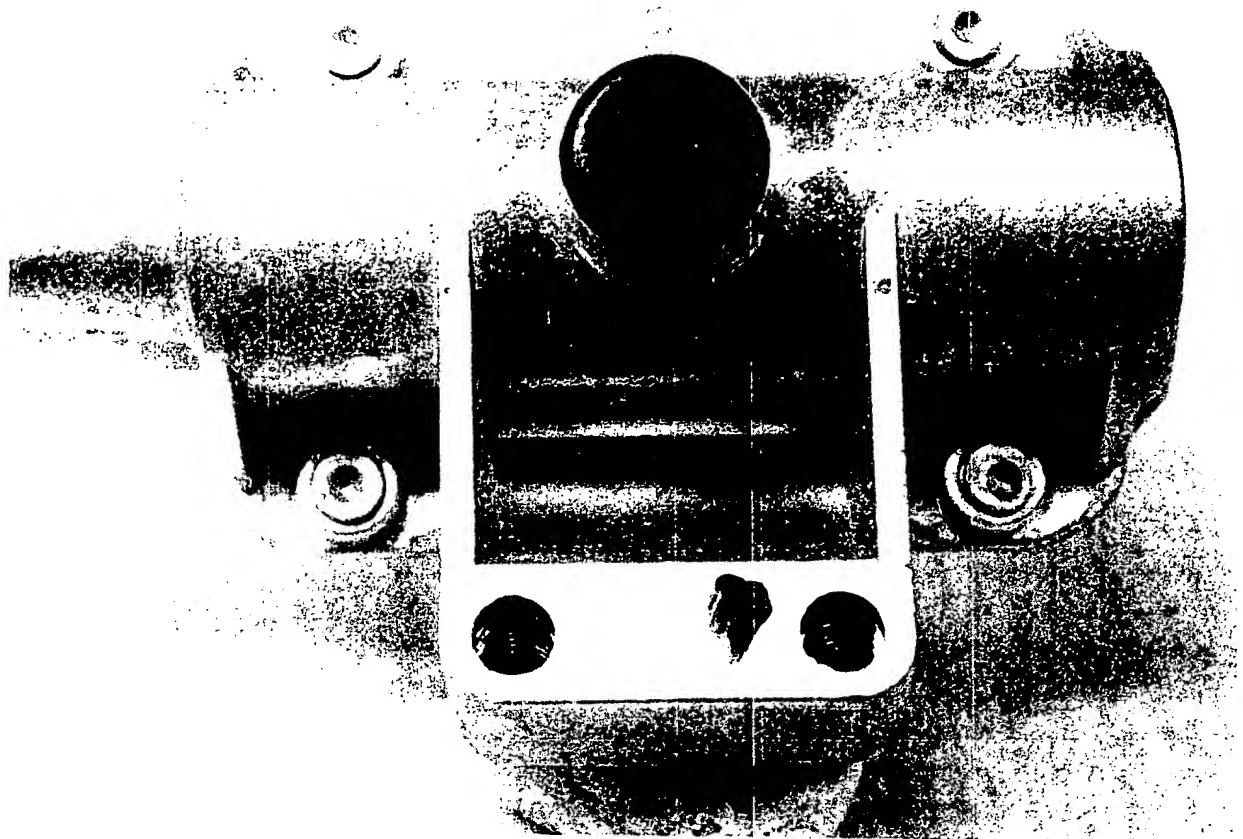


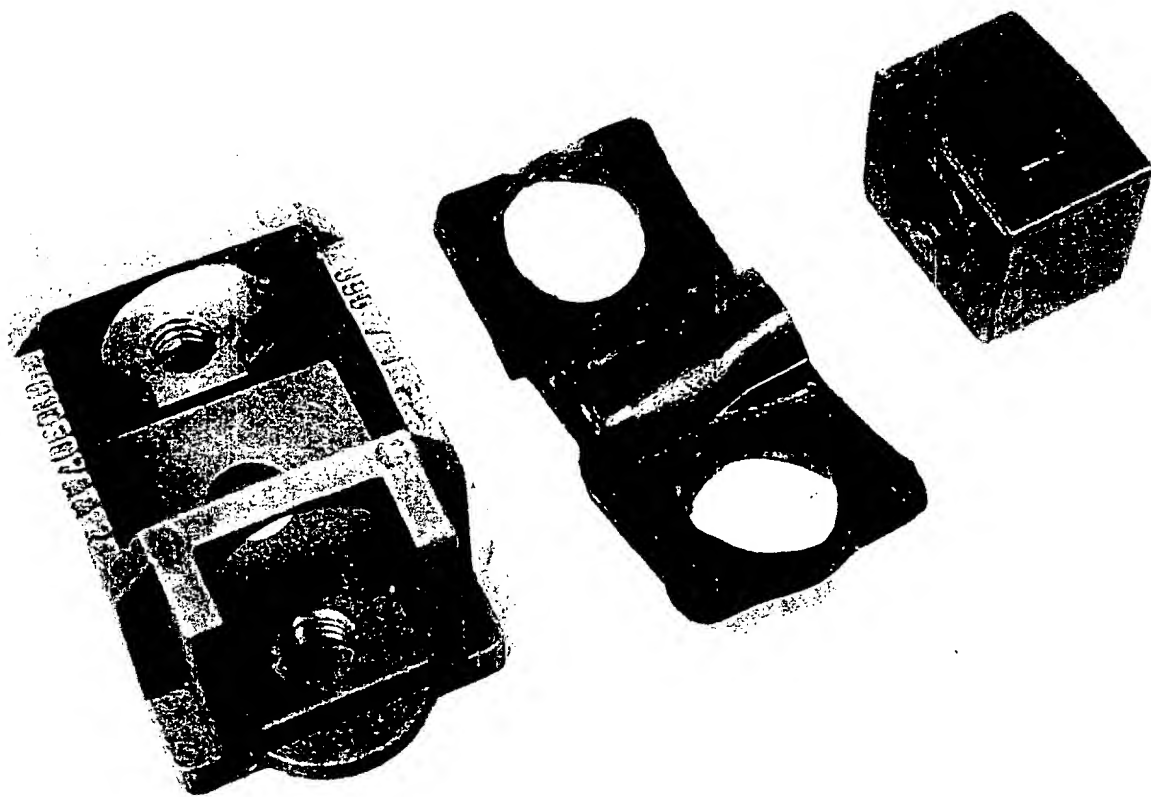


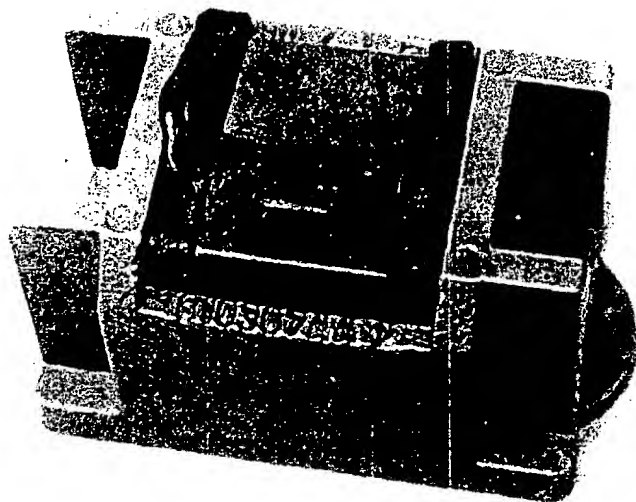




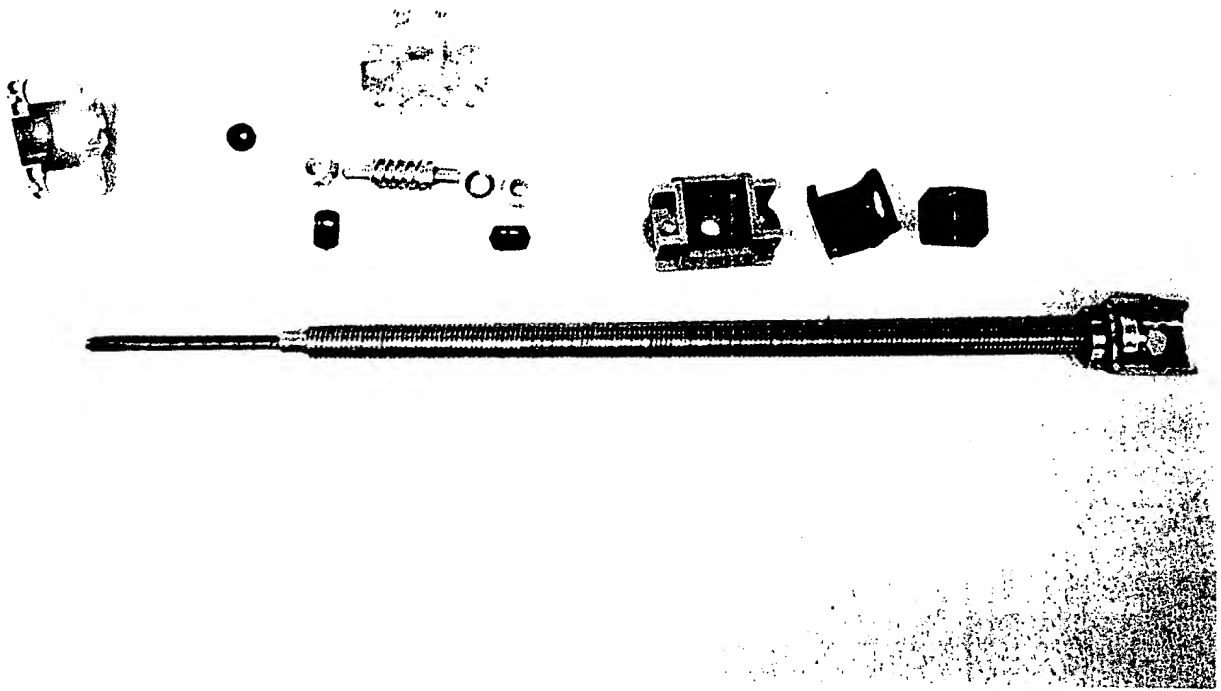


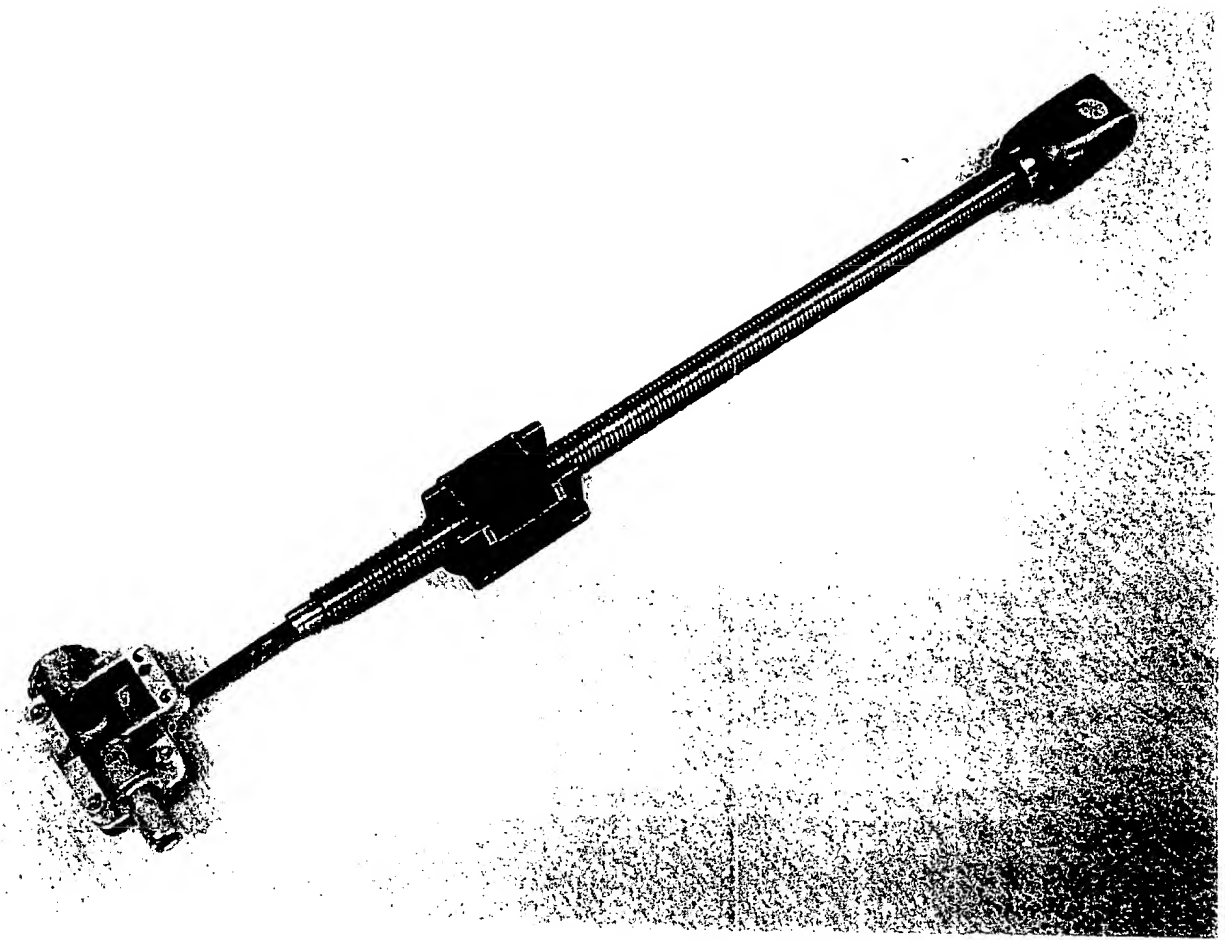


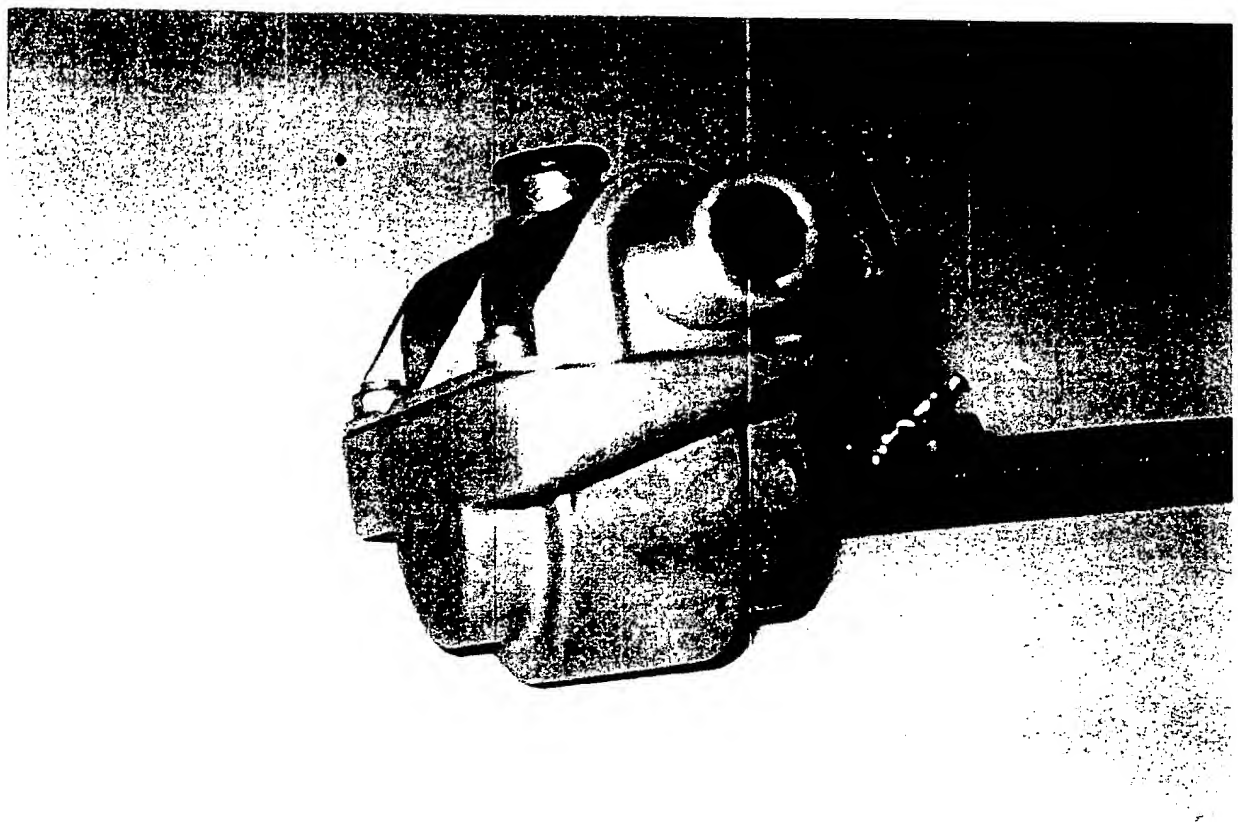


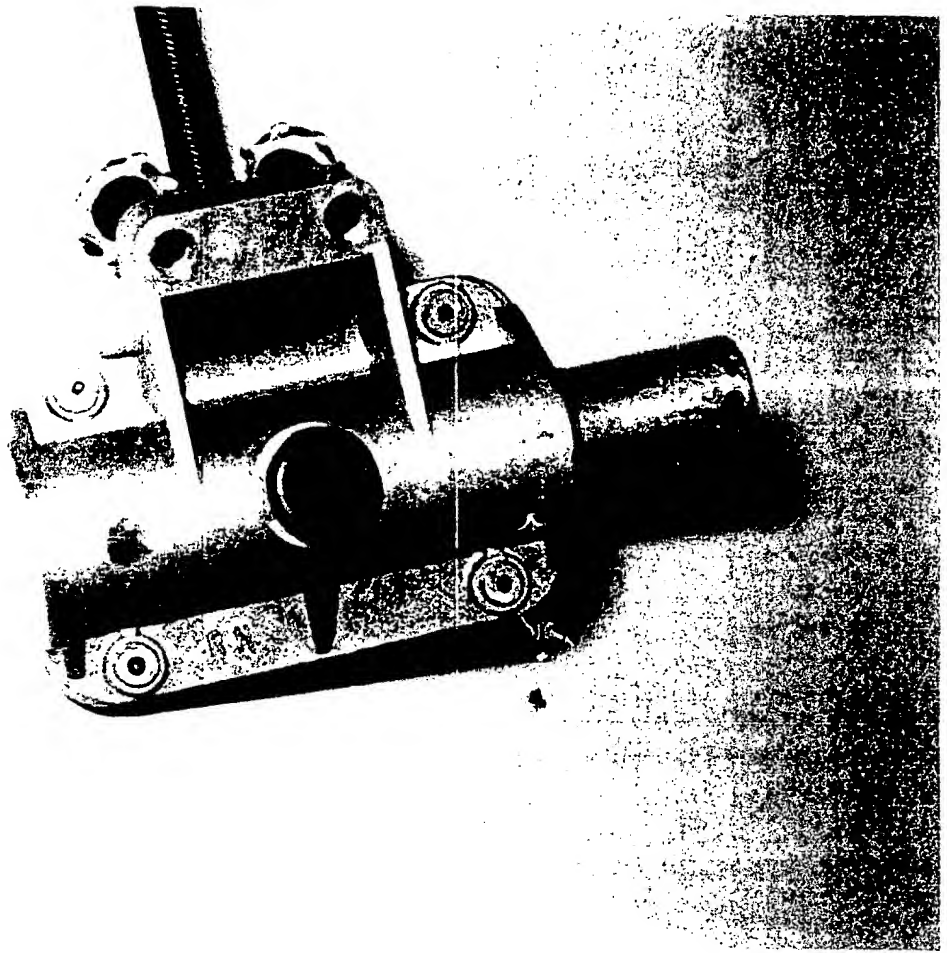


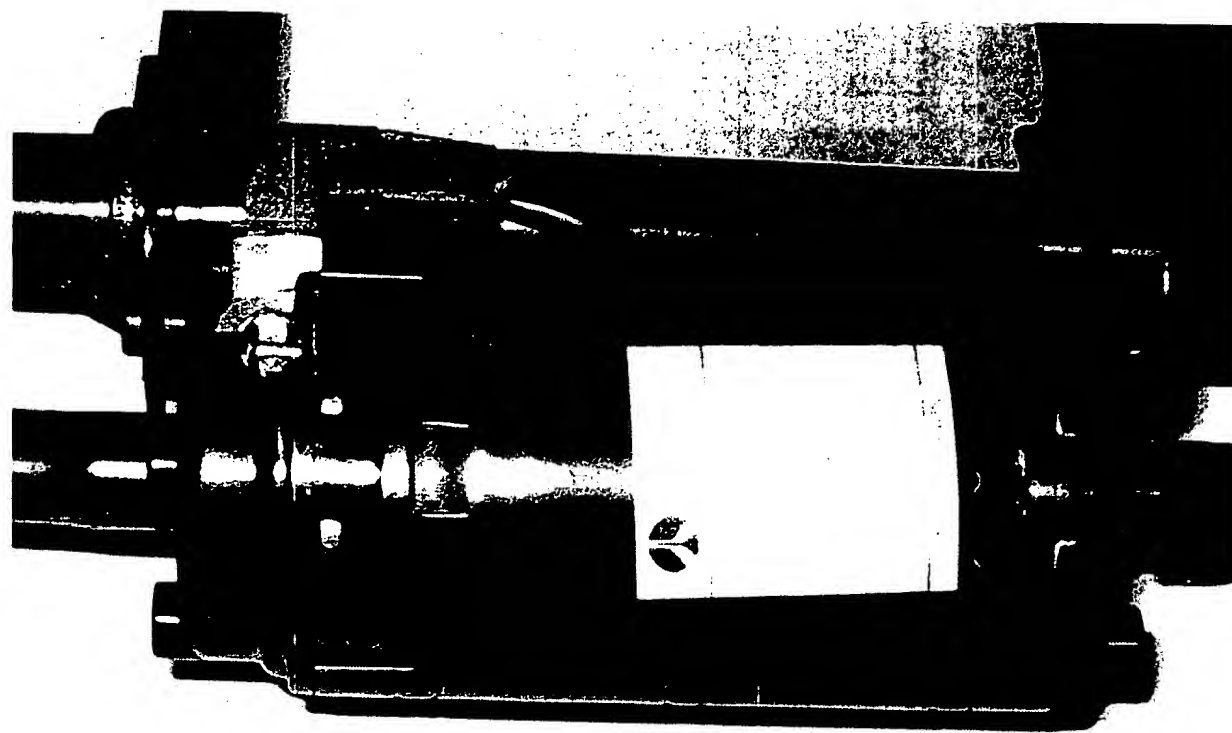
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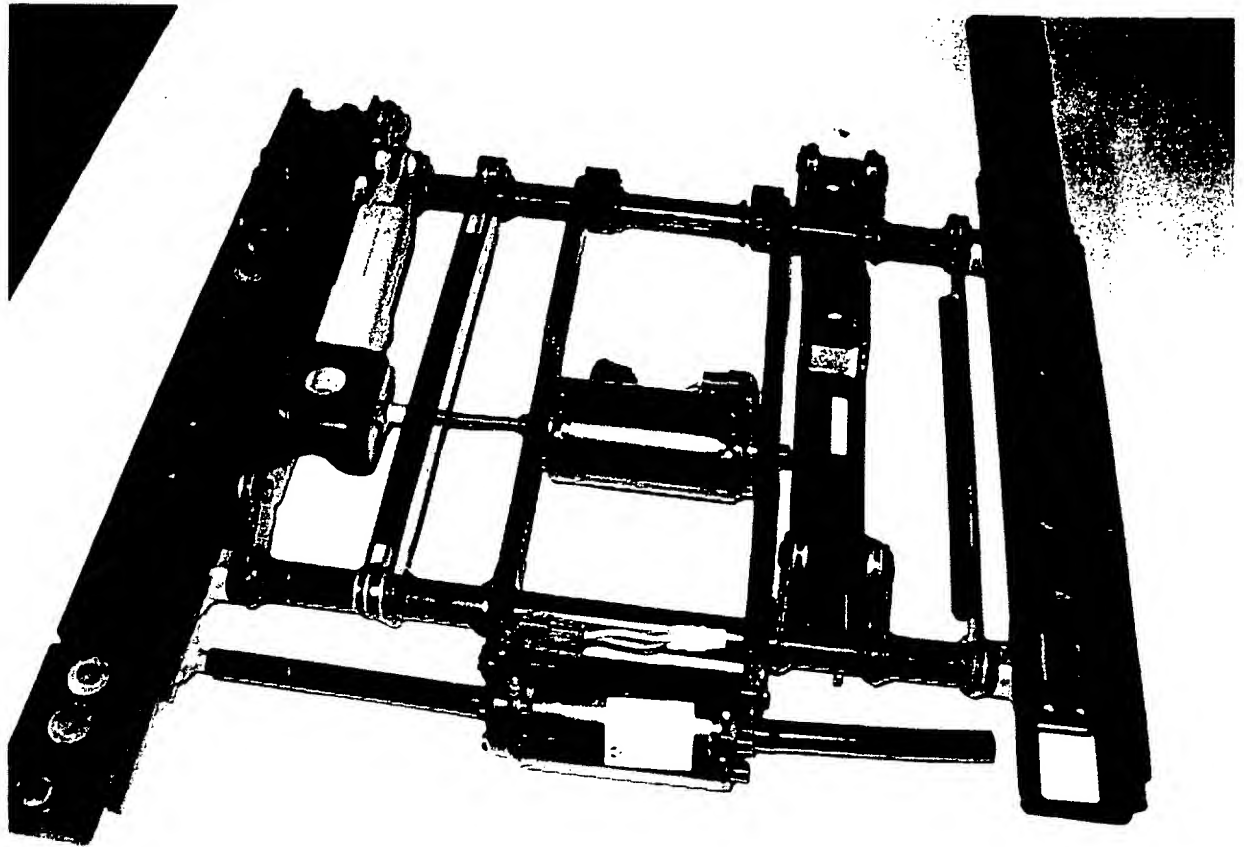


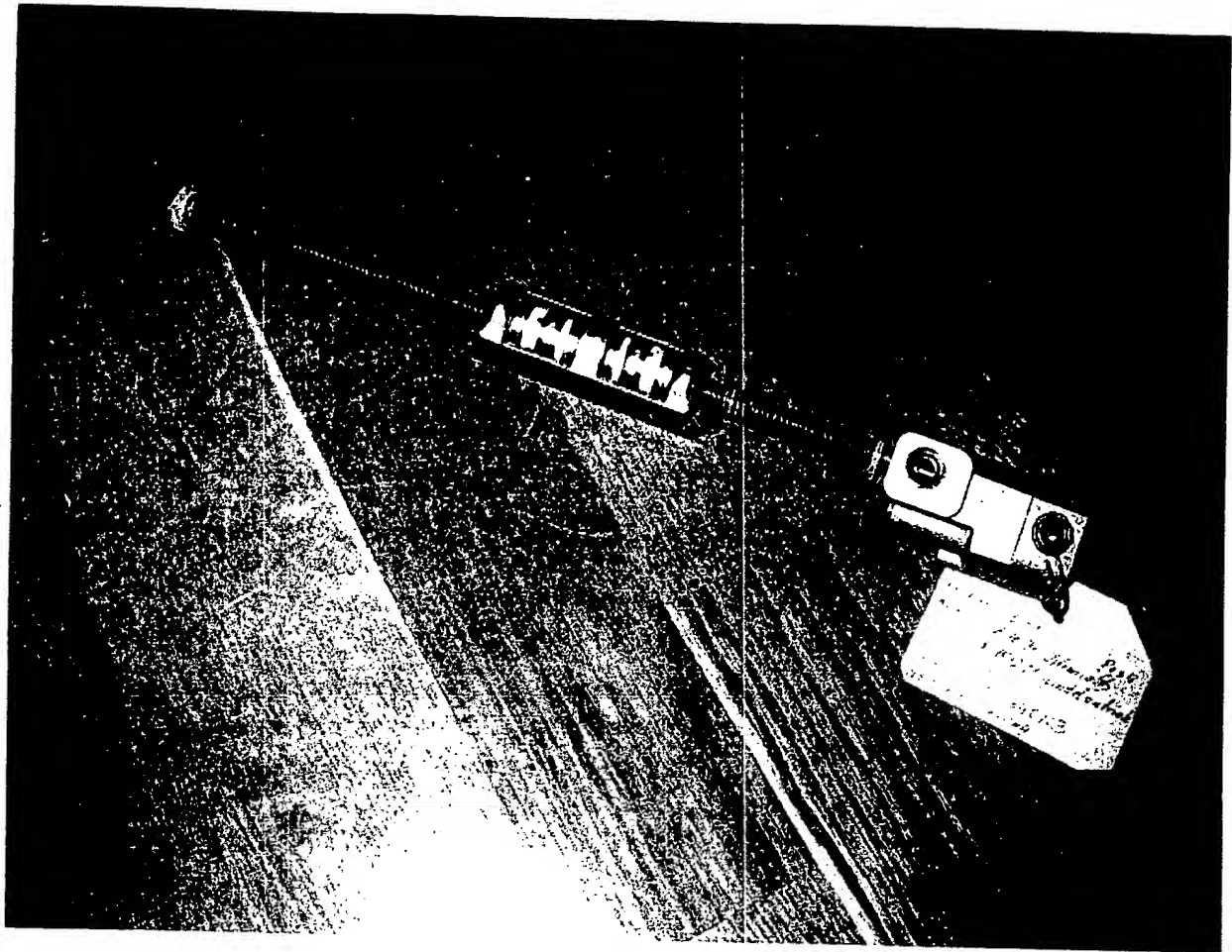












www.e31.net

<http://www.e31.net>

Models

830i

840Ci

850i

850Ci

850Csi

M8

Alpina B12 5.0

Alpina B12 5.7

E31 production

Shipments

Technical data

Inside

Exterior

Development

General

Images

Videos

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## The different models of the 8 series (E31)

There are the following different types of 8-series coupés:

Type	Power	Engine	Production period
830i	?	?	04/1992 - 12/1992
840Ci	286 hp	V8, 4.0l	07/1993 - 02/1996
840Ci	286 hp	V8, 4.4l	01/1995 - 05/1999
850i	300 hp	V12, 5.0l	05/1989 - 12/1992
850Ci	300 hp	V12, 5.0l	01/1993 - 10/1994
850Ci	326 hp	V12, 5.4l	02/1994 - 05/1999
850CSi	380 hp	V12, 5.6l	08/1992 - 11/1996
Alpina B12 5.0	350 hp	V12, 5.0l	06/1990 - 05/1994
Alpina B12 5.7	416 hp	V12, 5.7l	11/1992 - 12/1996

There are also european models and US-versions. They differ sometimes in extras, overall gearing and power. Until not explicitly said otherwise, the information presented on this site refers to the european models.

The following amount of 8-series cars has been manufactured from May 1989 until May 1999:

Type	830i	840Ci	850i	850Ci	850CSi	850s	Total 8-series	Alpina B12 5.0	Alpina B12 5.7
Amount	18	7803	20072	1218	1510	22800	30621	97	57

The Alpina B12 5.0 and 5.7 coupés are tuned versions of 850is and 850CSis and do therefore not add to the total of 8-series cars built.

### BMW 830i

04/1992 - 12/1992, prototype, number: 18

The 830i was conceived as the entry model of the 8 series. 18 prototypes have been built and all of them were destroyed again. None of the 830s has ever been ready for production let alone for sale. BMW will not disclose the type of engine used in those prototypes.

### BMW 840Ci

07/1993 - 02/1996, V8 (M60), 4.0l displacement, 286 hp, number: 4728  
 01/1995 - 05/1999, V8 (M62), 4.4l displacement, 286 hp, number: 3075

Only two years after its introduction in 1992 the 850i's sales numbers dropped by two thirds, BMW had to make the 8 series more attractive. Along with the 850CSi as the sport version (not advertised as an M car) there had to come an entry model. After the 830i proved to be improperly motorized, the four-liter M60 engine was selected.

The 840Ci got an engine upgrade in 1995. It appears that both engines were available in 1995 and 1996 at the same time. The new M62 engine did not only have more torque but it didn't have the old M60's problems with american high-sulfur fuel which caused many problems until then.

The 840Ci was available with a 5-speed automatic or a 6-speed manual gearbox in Europe. In the United States there was only the 5-speed automatic transmission.

Here you will find detailed technical data.

## BMW 850i

05/1989 - 12/1992, V12 (M70), 5.0l displacement, 300 hp, number: unknown (including M70 850Ci: 20072)

At the time of its introduction in the beginning of the 1990s it was one of the, if not *the* advanced car of its time. For the first time there was a twelve-cylinder engine available with a six-speed manual gearbox. New as well was the seat-integrated retaining-system, the integral rear axle (which got perfected in the 850CSi) and the still unique integration of low beams, high beams *and* fog lights - three lamps - into pop-up headlights.

The 850i was available with either a 4-speed automatic or a 6-speed manual gearbox.

Here you will find detailed technical data.

## BMW 850Ci

01/1993 - 10/1994, V12 (M70), 5.0l displacement, 300PS, number: unknown (including M70 850i: 20072)

02/1994 - 05/1999, V12 (M73), 5.4l displacement, 326PS, number: 1218

It is quite tricky to distinguish between the 850i and the 850Ci. You can read from the production table that production of these two models was overlapping for eight months. And the upgrade to the advanced M73 engine did not coincide with the change in the type designation. In addition even material from BMW contradicts itself. You can read in the owner's handbook of a '93 850CSi that the 850Ci has a 300hp engine (the M70). According to BMW production figures the 850Ci does only exist since the M73 engine with 326hp was built into it (1994).

The 850Ci with M70 engine was available with a 4-speed automatic or a 6-speed manual transmission, the 850Ci with M73 power plant only with the 5-speed automatic gearbox. So there are no 5.4l 850s that are manual.

With the introduction of the 850CSi BMW added the shortcut *C* (for Coupé) to all their coupés. The 850i became the 850Ci. The additional *S* in CSi means *sport*. Maybe that should remind of the 635CSi.

In order to avoid any misunderstandings, the 850 with the M70 engine and 300hp will be called 850i on this website, and the version with 326hp and the M73 engine 850Ci accordingly!

Since 01/1993 leather seats became standard, the adaptive 4-speed automatic, folding rear seat backs and the ski bag were introduced.

Here you will find detailed technical data.

## BMW 850CSi

08/1992 - 11/1996, V12 (S70), 5.6l displacement, 380 hp, number: 1510

As expected, the 850CSi makes no exception in having several names. In this case, the term *M8* is mentioned on and on again. And it's correct. The 850CSi is a real M-car. It does not only have an M-bred engine (type S70, the *S* indicates M-origin) but has been manufactured by BMW M as well, according to the VIN which starts with *WBS* (BMW Motorsport) instead of *WBA* (BMW AG). This is mentioned in the papers as well. But although the papers say that the correct model name is BMW M8, the car has been enhanced only moderately by the M-Division, compared to the real M8, which remained a prototype only.

Here are the papers of a BMW 850CSi:

Schlüsselnummern			
1	010234	2	0075
3	5090011		
1 PKW GESCHLOSSEN			
SCHADSTOFFARM E2			
2 BMW MOTORSPORT			
3 M87			
4	Fahrzeug	WBSFG91070CC00419 X	
5	Motor-Nr.	6	Werkzeugmaschinen-Nr.
7	Leistung	8	250
9	KW bei min-1	K280/05300	
10	Motorraum	05576	
11	Werkzeug	12	Werkzeug
13	Werkzeug	14	Werkzeug
15	Werkzeug	16	Werkzeug
17	Werkzeug	18	Werkzeug
19	Werkzeug	20	Werkzeug
21	Werkzeug	22	Werkzeug
23	Werkzeug	24	Werkzeug
25	Werkzeug	26	Werkzeug
27	Werkzeug	28	Werkzeug
29	Werkzeug	30	Werkzeug
31	Werkzeug	32	Werkzeug
33	Werkzeug	34	Werkzeug
35	Werkzeug	36	Werkzeug
37	Werkzeug	38	Werkzeug
39	Werkzeug	40	Werkzeug
41	Werkzeug	42	Werkzeug
43	Werkzeug	44	Werkzeug
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47	Werkzeug	48	Werkzeug
49	Werkzeug	50	Werkzeug
51	Werkzeug	52	Werkzeug
53	Werkzeug	54	Werkzeug
55	Werkzeug	56	Werkzeug
57	Werkzeug	58	Werkzeug
59	Werkzeug	60	Werkzeug
61	Werkzeug	62	Werkzeug
63	Werkzeug	64	Werkzeug
65	Werkzeug	66	Werkzeug
67	Werkzeug	68	Werkzeug
69	Werkzeug	70	Werkzeug
71	Werkzeug	72	Werkzeug
73	Werkzeug	74	Werkzeug
75	Werkzeug	76	Werkzeug
77	Werkzeug	78	Werkzeug
79	Werkzeug	80	Werkzeug
81	Werkzeug	82	Werkzeug
83	Werkzeug	84	Werkzeug
85	Werkzeug	86	Werkzeug
87	Werkzeug	88	Werkzeug
89	Werkzeug	90	Werkzeug
91	Werkzeug	92	Werkzeug
93	Werkzeug	94	Werkzeug
95	Werkzeug	96	Werkzeug
97	Werkzeug	98	Werkzeug
99	Werkzeug	100	Werkzeug

Only 1510 units of the BMW 850CSi were built from August 1992 until October 1996. Because of stricter emission guidelines from January 1997 on, the production of the 850CSi ceased as further development, because of the few cars sold, would have been too expensive. So it has the same destiny as the Aston Martin V8 Vantage. By the end of 1996, all dealers still having a CSi, were instructed to license them - and if it was for one day only - because with the new guidelines it would have been impossible to do.

Specification		Extras that were 'standard' in every 850CSi
Euro	USA	

x	x	Engine S70B56
x	x	6-speed manual (automatic not as an option)
x	x	Final drive ratio 2.93:1
x		Final drive oil cooler
x		Engine oil cooler
x	x	Stiffer suspension (No electronic damping control available)
x	x	Chassis lowered 15mm
x	x	Servotronic, motorsport specific
x	x	Limited slip differential
x	x	Automatic Stability Control + Traction (ASC+T)
x	x	Aluminium wheels with brake ventilation
x		Active rear axle kinematics, motorsport specific
x	x	Electric steering wheel adjustment
x		Stronger brakes
x	x	Upgraded front and rear spoiler
x		M-design door mirror
x	x	Dashboard with red pointers and different looks
x	x	850CSi-badge
x	x	Folding rear seat backs and ski bag
x		M-Interieur (Bicolor)
x	x	Leather seats
	x	'BMW Motorsport' written on doorhandles
x	x	///M emblem embossed in lower door frame

### The hydraulic four-wheel-steering

Maybe what makes the 850CSi most special was the Active Rear-Axle Kinematics system which was standard on all Euro CSis. It's abbreviation (AHK) is the abbreviation of the german expression for it (Aktive Hinterachs-Kinematik). While normal passively steering rear axles allow the wheels to be slightly turned by the forces acting on them when cornering, the hydraulics of the AHK turns in the rear wheels *before* those forces build up. The AHK is therefore a real for-wheel-steering system!

From a speed of about 60 kph (37 mph, BMW doesn't disclose the correct numbers) and up, a computer controlled hydraulic system steers the rear wheels depending on the turn angle of the front wheels. All four wheels then turn into the same direction, minimize weight shifts (the CSi weighing almost two tons even beats Turbo-Porsches in lane change maneuvers) and even allow steering adjustment in a curve to an extent that would inevitably cause you to crash in any other car. According to various sources the maximum angle the rear wheels turn is between 1.5 and 2.5 degrees (again, BMW doesn't tell).

With the introduction of the CSi the Active Rear-Axle Kinematic was also on the option list for the normal 8 series. But the additional amount of money you had to pay was 6400 Euros (DEM 12500),

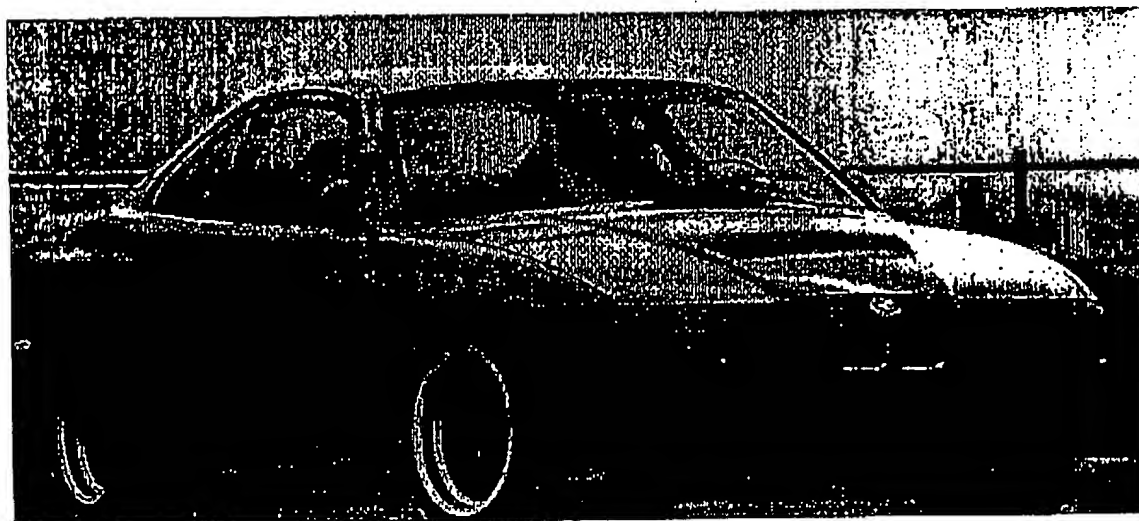
so a non-CSi with AHK will belong to the rarest things on this planet.

Here you will find detailed technical data.

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## BMW M8

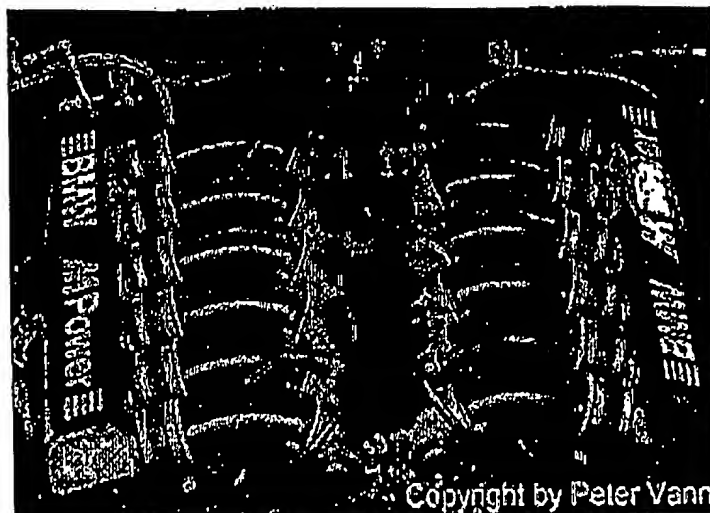
1990, V12 (S70/1), about 6.0l displacement, 550 hp, prototype, number: 1



The BMW 850CSi is a detuned version of the M8 which has never been produced and remained a prototype only. The M8 should have been built in a consequently lightweight manner in order to be a 'Ferrari-Killer'. The specially developed 550 hp engine has never been used except in the prototype - of which only one exists. But with the support of McLaren the M8 engine was transformed into the power plant of the McLaren F1 super sports car. At the time of development of the M8 there was virtually no market for such a car, so the BMW manager cancelled the project.

The M8-Prototype is perhaps the best-kept secret of BMW. Absolutely no one must see it or can get information, by order from the general manager himself. Questions from motorsport magazines remain unanswered as well. The car is locked away in the so-called *Giftschrank*, which could be translated as 'poison-storage'. According to BMW it is hidden behind lots of boxes anyway and will be destroyed in the near future as the 8 series doesn't exist any more and neither a successor.





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The Prototype has never been road safe (even the headlights were missing as you can see in the picture) and was only loosely patched together, which is the reason why it is not presented in their museum. It's not even good for that ...says BMW.

Yes, the papers of an 850CSi say, it's an M8, but that's not of much use if you know what it could have been. What the S70 engine is capable of speaks for itself. See the world record run of the McLaren F1. The guys at McLaren say they could get 1000 hp at 9500 or 10000 rpm from the engine.

#### The different versions of the S70 engine:

S70	5576 ccm	380 hp, 24V, 850CSi	1992
S70/1	about 6000 ccm	550 hp, 48V(?), M8 prototype	1990
S70/2	6064 ccm	627 hp, 48V, McLaren F1	1993
S70/3	6064 ccm	635 hp, 48V, McLaren F1	1996



## Alpina B12 5.0 Coupé

06/1990 - 05/1994, V12 (based on M70), 5.0l displacement, 350 hp, number: 97

The Alpina coupé are tuned 8 series cars taken from the normal production lines. Their number is included in the production- and shipment figures. So they do not add to the total number of 8 series cars.

The Alpina B12 5.0 Coupé is based on the 850i and was available with the 4-speed automatic gearbox only.

Here you will find detailed technical data.

## Alpina B12 5.7 Coupé

11/1992 - 12/1996, V12 (based on S70), 5.7l displacement, 416 hp, number: 57

The Alpina coupé are tuned 8 series cars taken from the normal production lines. Their number is included in the production- and shipment figures. So they do not add to the total number of 8 series cars.

The Alpina B12 5.7 Coupé is based on the 850CSi and was available with 6-speed manual transmission only.

Here you will find detailed technical data.

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- | DME1.1 E30
- | DME1.2 E32
- | DME1.3 E30 / E32 / E34
- | DME1.7 E32 / E36
- | DME1.7.2 E36
- | DME3.1 E32 / E34 / E36
- | DME3.3 E32 / E34 / E36
- | DME3.3.1 E32 / E34 / E36
- | DME5.2\* E36 / E38 / E39 / CODING
- | BMS43 E36 / E46 / CODING
- | BMS46 E46 / CODING

- | MS40 E32 / E34 / CODING
- | MS41 E38 / E39 / E46 / CODING
- | MS42 E38 / E39 / E46 / CODING
- | MS43 E46 / E38 / E39 / E53 / CODING
- | MS52 E39 / Z8
- | DME7.2\* E38 / E39 / CODING

\*Engines M73, M73TU, S73 Not Supported in Live Data or Coding

⇒ Reset Adaptation Values to Basic Settings on self-adapting systems.

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ECU CODING ALL 1998-2002

EWS SYNCHRONIZATION → ALL 1995-2002

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- | BOSCH 3 Channel E31 / E32 / E34
- | BOSCH 5 Channel E38 / E39 / E46 / E53

#### ◆ AIRBAG : DTC Read and Erase

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Including:

- | Driver Airbag
- | Driver and passenger Airbag
- | Airbag with Side Airbags (Side Bags)
- | Airbag with Side and Window Airbags (MSR2&MSR3)

**MODULE CODING E46/E53/E38/E53/E39**◆ **Air-conditioning : DTC Read and Erase****Most AIRCON (HKL / IHKA) - SYSTEMS from 1994 until December 2002**

- | IHK1 E34 (94>)
- | IHK2/3 E34 / E36 (94>)
- | IHKA E32 / E34 /36
- | IHKA E38 / E39
- | IHKA E46

Note: E38/ E39 / E46 Auto Climate Control Systems are version codeable (C to F) under the ZKE Mr

◆ **BC/MID On-Board Computer / Multi-Information Display : DTC Read and Erase**

E32 / E34 / E31 / E36 (Except for Self-diagnosable units)

◆ **IC Instrument Cluster : DTC Read and Erase**

E32 / E34 / E36 (Except Compact) / E38 / E39 / E46 / E53 / Z3

Including:

**VERSION CODING E38 / E39 / E46 + X5 (New in SP04)**

Change Mileage indications from Miles to Kilometers

Change Time from 12 to 24 hour time scale

Change Temperature Display from F to C

Change Climate Control Display from F to C

Change display language (English, Spanish, French, Italian, German)

◆ **DWA Original Alarm System : DTC Read and Erase**

DWA E31 / E32 / E34 / E36

Alarm Counter E34 / E30 / E31 / E32 / E34 / E36

◆ **LKM, CCM Light Control /Check Control Module : DTC Read and Erase**

E36 / E38 / E39 / E46 / E53 / Z3 / Z8

Including:

- | Read-out of Original Mileage in Kilometers
- | Verification of Chassis Number (VIN)

◆ **ZKE/ZVM Central Body Module : DTC Read and Erase**

E31 / E32 / E34 / E36 / E38 / E46 / Z3 / X5

Including:

- | ZVM E36
- | ZKE II E32 / E34 / E36 / E31
- | ZKE III E38 / E39 **VERSION CODING**
- | ZKE IV E36

# **I ZKE V E46 VERSION CODING**

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- I EGS 1 E32 / E34 / E31
- I EGS 2 E34 / E36
- I EGS 3 E32 / E34 / E36
- I EGS 4 E31
- I EGS 5 E38 / E39 / E46

⇒ Reset Adaptation Values to Basic Settings

## • **EWS Immobilizer System :** DTC Read and Erase

► **Including Synchronization** with DME & DDE (DME 5.2 and later 1996 >)

Including:

- I EWS 2 E36 / E38 / E39 / E46 / Z3
- I EWS 3 E36 / E38 / E39 / E46 / E53 / Z3

## • **PDC Park Distance Control :** DTC Read and Erase

E38 / E39 / E46 / E53 / Z3 / Z8

## • **CVM Convertible Top Systems :** DTC Read and Erase

E36 (Late) / E46 / Z3 (Late)

## • **S/I Reset & Management :**

**ALL SYSTEMS** from 1988 until December 2002

E30 / E31 / E32 / E34 / E36 / E38 / E39 / E46 / E53 / Z3 / Z8

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